7 (4)

AUTHOR: Kudokotsev, V. P.

TITLE: Regeneration of Extremities in Ablepharus deserti Strauch (Regeneratsiya konechnostey u pustynnogo gologlaza (Ablepharus deserti Strauch))

SOV/20-126-5-66/69

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 5, pp 1141 - 1144 (USSR)

ABSTRACT: As is well known some lizard species are able to regenerate their extremities imperfectly. The species mentioned in the title has this property (Refs 3,7). With the reptiles these processes are insufficiently investigated in contrast to amphibiums (Refs 6,8). Since the lizards belong to the most inferior terrestrial amniote vertebrates, the greatest part of which has lost the said property, the problem mentioned is interesting. Its results must contribute to the comprehension of the alterations to which the regeneration processes are subjected under the conditions of the manner of living on land. With the first series of the said lizards the right hind-legs were amputated in the distale 1/3 of the upper part of the thigh. The material was fixed on the 1st, 2nd, 5th, 7th, 10th, 12th, 15th, 20th, 30th, 45th, 60th, 106th, and 120th day after the amputation. In

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the second series the extremities were amputated in an oblique cut whereby the amputation surface was enlarged. The dependence of the regeneration on the size of this surface was studied. Figures 1-3 show microphotographs of the regenerates. The results of the investigations testify that the main steps of the regeneration of an extremity of the mentioned lizard are like the regeneration steps of the Urodela and Anura (amphibiums) with respect to some fundamental peculiarities. This apart from other notions (Ref 1) points to the fact that a distant ancestor of the land vertebrates which possessed walking extremities was capable of the regeneration. The missing of this ability at the most land vertebrates is based on the loss of this capacity in the course of the phylogenesis under conditions of the manner of living on land. This loss is not effected by a weakening of the regeneration capacity of the texture. Apparently it is a consequence of the disturbance of the texture interrelations necessary for the regeneration which were proper to the ancestors of the land vertebrates. The intensity decrease of the texture destruction especially of the skeleton in the rest of the extremities could lead to such a disturbance,

Regeneration of Extremities in Ablepharus deserti Strauch SOV/20-126-5-66/69

furthermore the rapid overgrowth of the connective tissue preventing the regeneration of the muscular system and the growing of the nerves into the epidermis cap. There are 3 figures and 15 references, 7 of which are Soviet.

ASSOCIATION: Khar'kovskiy gosudarstvennyy universitet im. A. M. Gor'kogo (Khar'kov State University imeni A. M. Gor'kiy)

PRESENTED: March 11, 1959, by I. I. Shmal'gauzen, Academician

SUBMITTED: February 19, 1959

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Predstavleno akademikom I.I. Shmal'gauzenom.
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(EXTREMITIES (ANATOMY)—INNERVATION)

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KUDOKOTSEV, V.P.

Stimulation of the regeneration process in mammalian extremities by the action of tissue extract. Nauch. dokl. vys. shkoly; biol. nauki no.3:40-43 '64 (MIRA 17:8)

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(TRACHOMA, physiology,
form & course)

USSR / Virology. Viruses of Man and Animals. Chlamydozoa.

Abs Jour : Ref Zhur - Biologiya, No 22, 1958, No. 99187

Author : Kudoyarov, G. Kh.
Inst : State Scientific Research Institute for Eye Diseases
Title : On Question of Differential Diagnosis of the Acute Incipient Period of Trachoma and Conjunctivitis with Inclusions

Orig Pub : Uch. zap. i inform. myetod. matyerialy. Gos. n.-i in-t glazn. bolyeznyey, 1957, No 5, 78-81

Abstract : No abstract given

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(Continued on next card)

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thrombophlebitis, influenza & necrosis of abdom. skin. (Cz))
(THROMBOPHLEBITIS, compl.
varicose veins, influenza & necrosis of abdom. skin (Cz))
(INFLUENZA, compl.
thrombophlebitis, varicose veins, & necrosis of abdom. skin. (Cz))
(NECROSIS,
skin of abdom., with thrombophlebitis, varicose veins & influenza (Cz))
(SKIN, dis.
necrosis of abdom. skin, with thrombophlebitis, varicose veins & influenza (Cz))
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KUDR, Jaroslav, MUDr., krajsky chirurg.

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Description of a case of extensive total scalping, which was healed by the primary application of the prepared scalp (according to Wolf-Krause). A good result was secured on the one hand by immediate surgery with the object of definitive coverage of the skin defect after skull scalping, on the other hand by the rapid preparation of the scalp, where a three-litre pan served as support for the scalp.

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(AUTOPSY)
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(DUODENUM diseases)
(DIVERTICULOSIS surgery)

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(THROMBOPHLEBITIS surgery)

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(SYMPATHECTOMY)

STARK, Jaroslav; KUDR, Jaroslav

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KUDRA, Josef

Resistance spot welding equipment. Zvaranie 12 no. 12: 347-352 D '63.

1. Zavodni pobocka Ceskoslovenska vedecko-technicke spolecnosti, Tatra, n.p., Koprivinice.

KUDRA, Josef

Advanced method of spot welding of automobile bodies.
Automobil Cz 8 no. 3: 19-24 Mr '64.

1. Tatra, Koprivnice.

30(1) SOV/21-59-5-23/25

AUTHORS: Gershenzon, S.M., Karpov, A.Ye. and Kudra, M.S.

TITLE: On the Activation of Silkworm Polyhedral Virus by Fluoride Treatment

PERIODICAL: Dopovidi Akademii nauk Ukrains'koi RSR, 1959, Nr 5, pp 550-553 (USSR)

ABSTRACT: The Vago's [Ref. 3-5] method of activating the latent virus of silkworm nuclear polyhedrosis (jaundice) by adding fluoride compounds to the food of larvae in order to eliminate carriers of the latent virus, was put by the authors to test. It was found out that such treatment results in an activation of the latent virus in only some of the individuals having it and only when they had been weakened before by unfavorable ecological conditions. A further increase of dosage of fluoride salts proved to be harmful to the larvae and led to perdition from bacterial diseases and physiological debility. A table on page 551 shows the results of the experiments. There is 1 table

Card 1/2

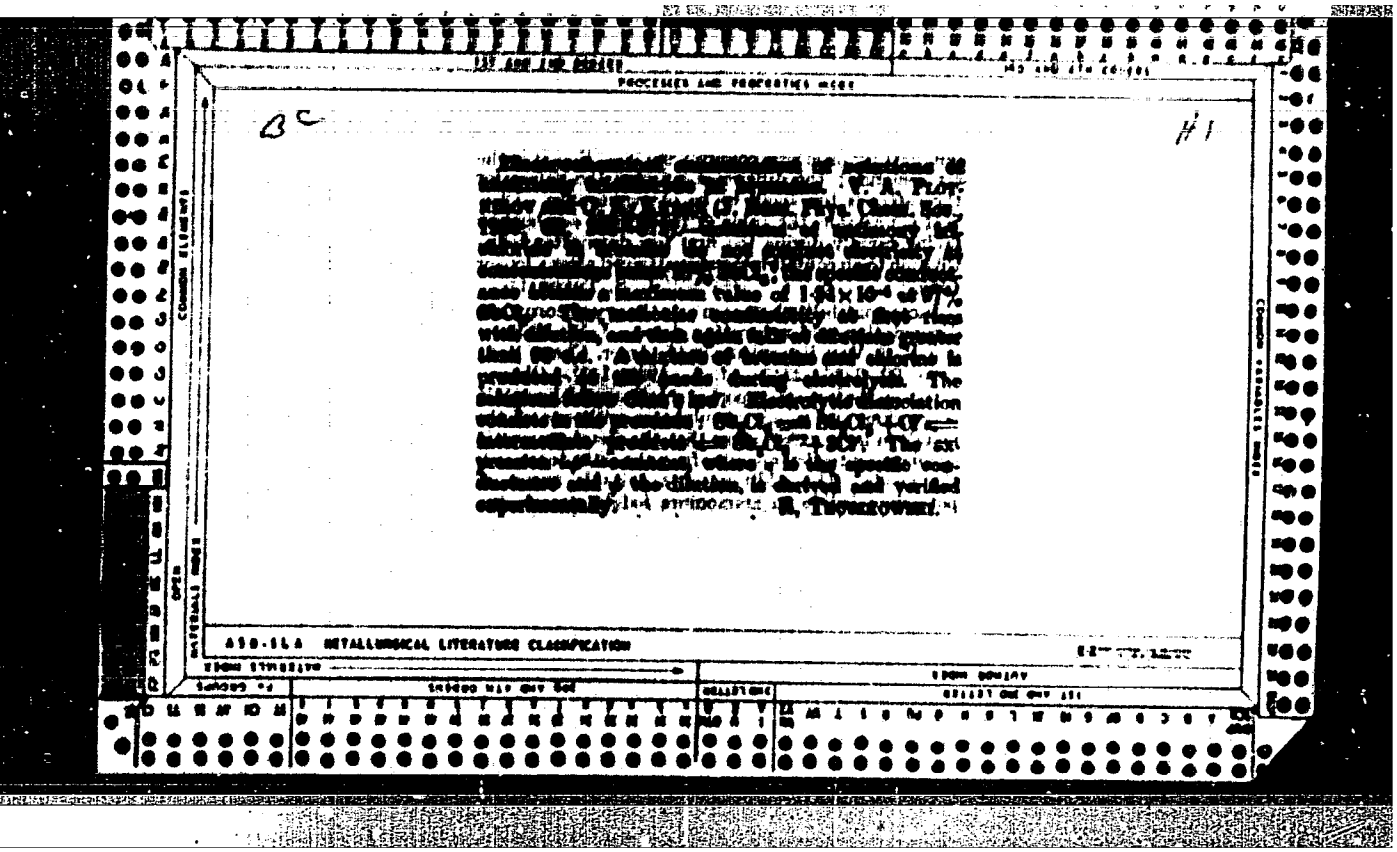
On the Activation of Silkworm Polyhedral Virus by Fluoride Treatment

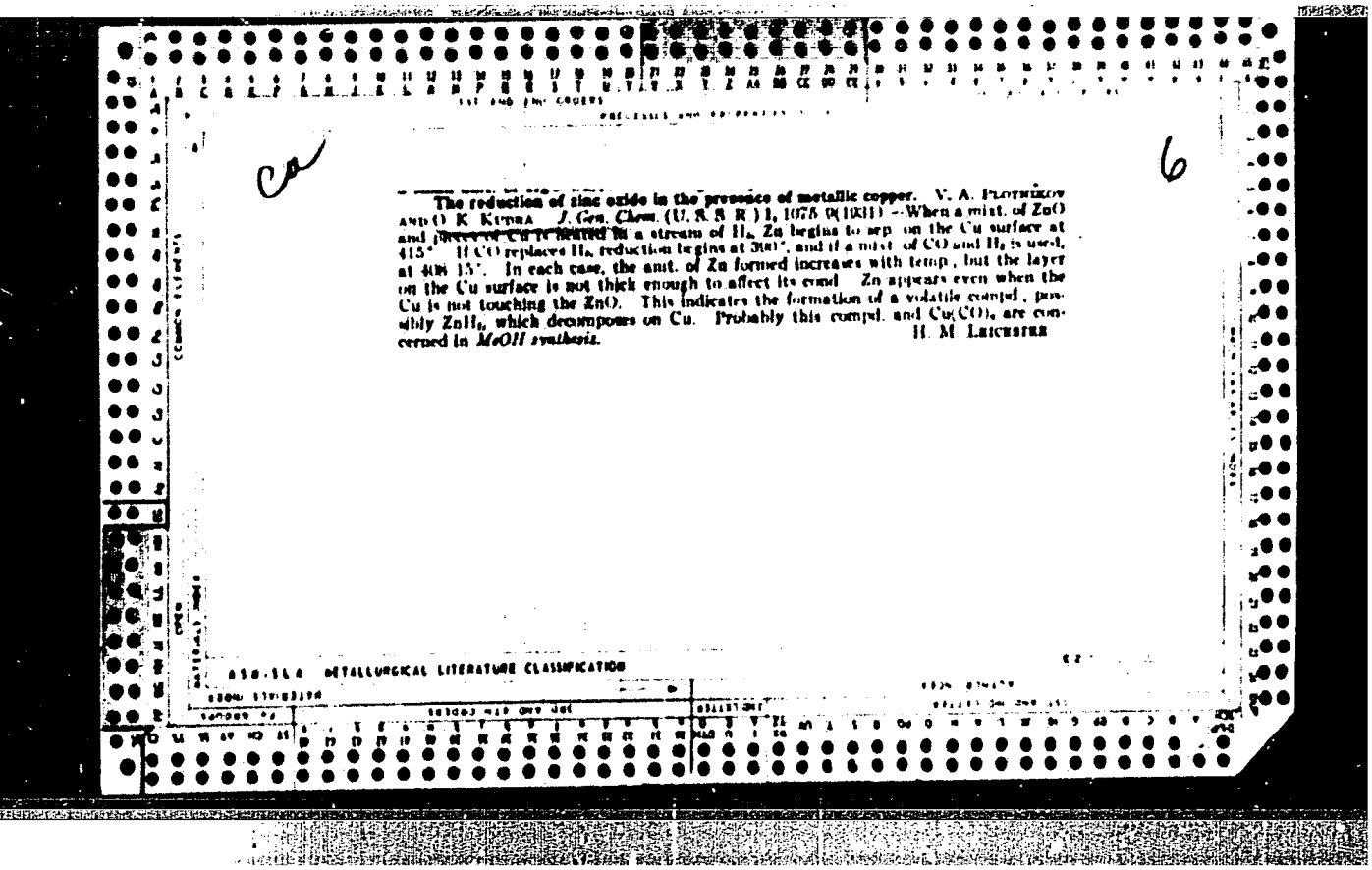
and 6 references, 1 of which is Soviet and 5 Italian.

ASSOCIATION: Institut zoologii AN UkrSSR (Institute of Zoology of the AS UkrSSR)

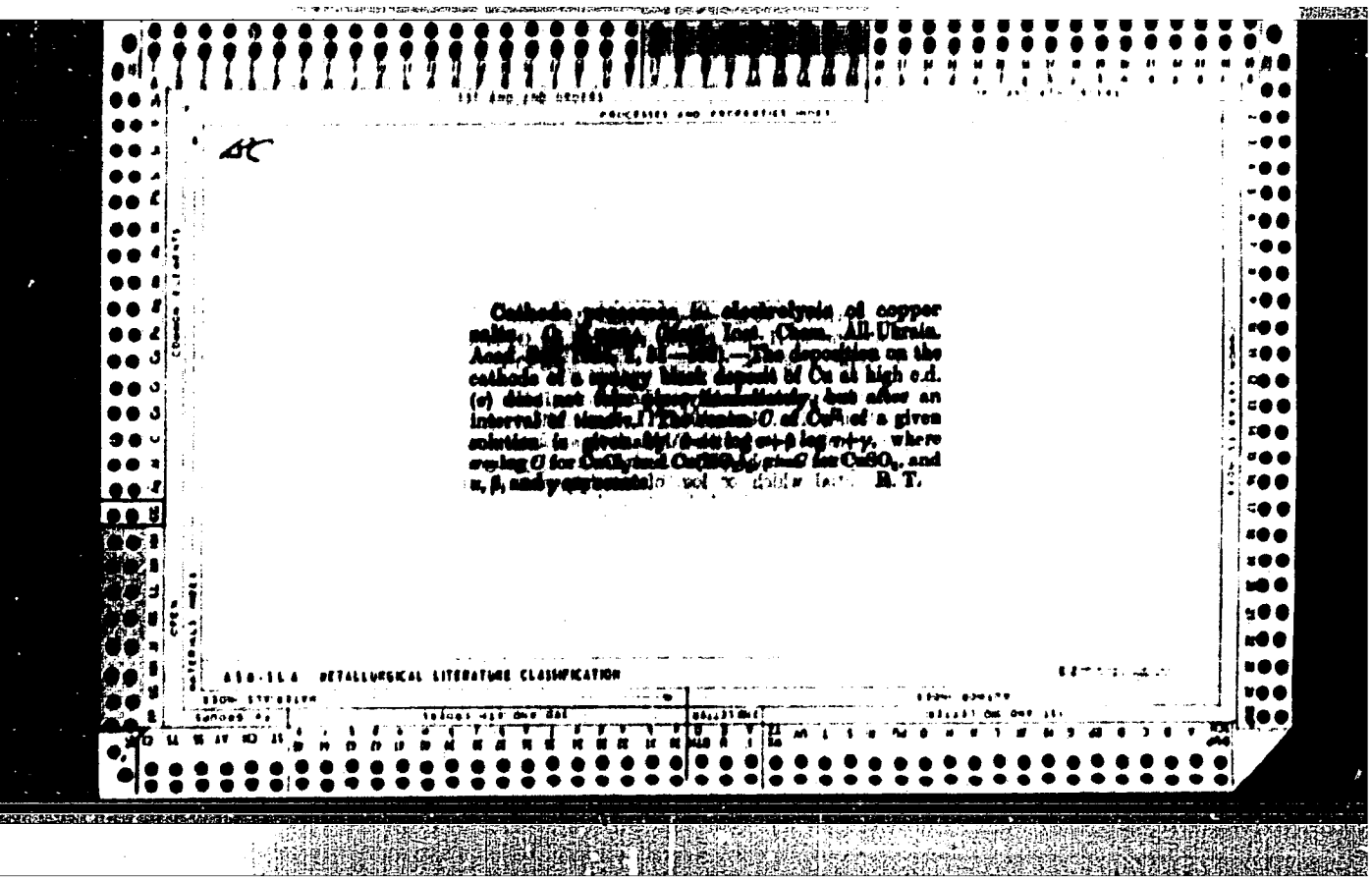
PRESENTED: By V.G. Kas'yanenko, Member of the AS UkrSSR

SUBMITTED: December 29, 1958



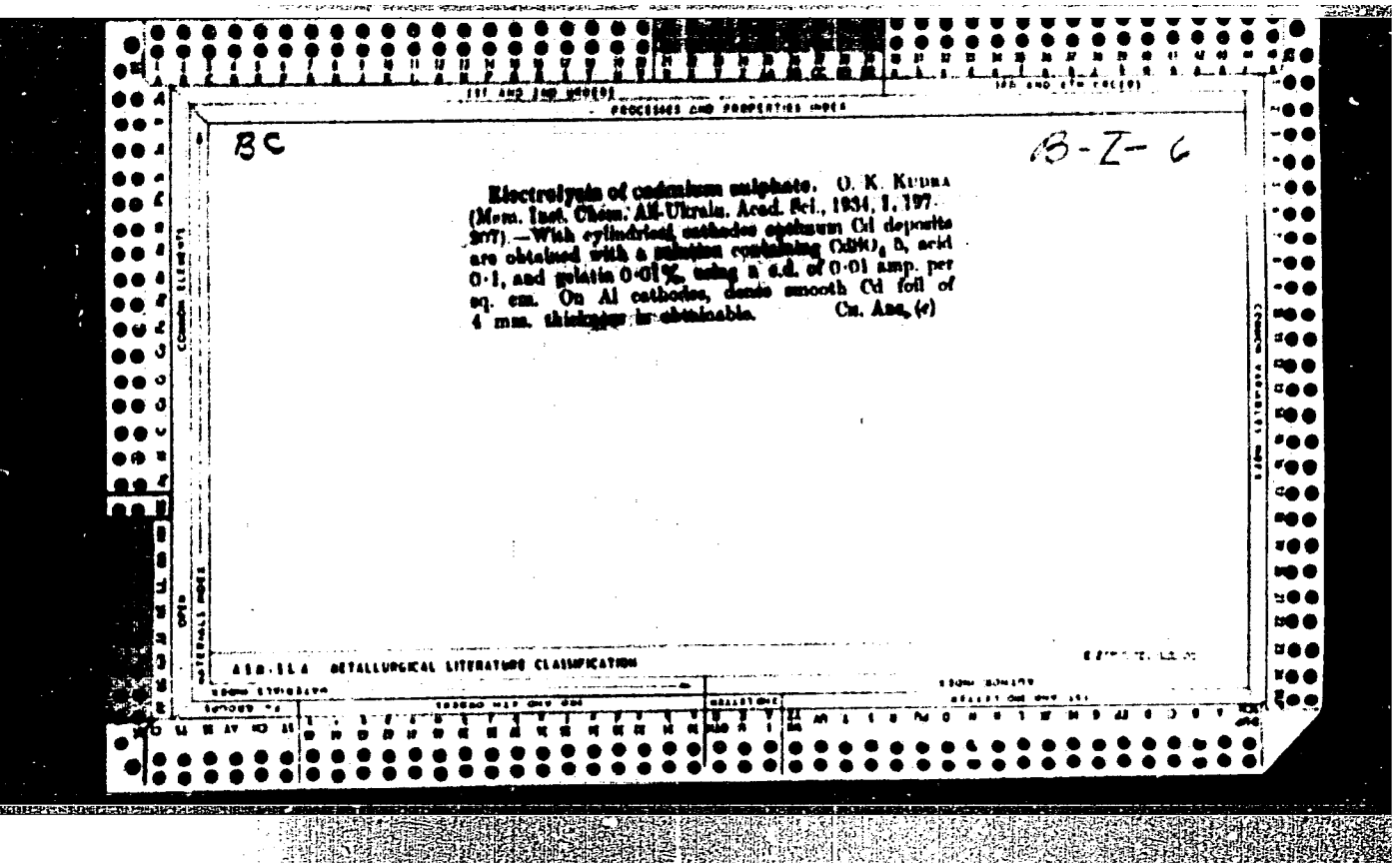


The reduction of zinc oxide in the presence of metallic copper. V. A. Plotnikov and O. K. Kudra. *J. Gen. Chem.* (U.S.S.R.) 1, 1075–9(1931).—When a mixt. of ZnO and powdered Cu is heated in a stream of H_2, Zn begins to sep. on the Cu surface at 415°. If CO replaces H_2, reduction begins at 308°, and if a mixt. of CO and H_2 is used, at 408–15°. In each case, the amt. of Zn formed increases with temp., but the layer on the Cu surface is not thick enough to affect its color. Zn appears even when the Cu is not touching the ZnO. This indicates the formation of a volatile compd., possibly ZnH_2, which decomposes on Cu. Probably this compd. and $Cu(CO)_x$ are concerned in *MeOH synthesis.* H. M. Leicester



Cathode [illegible] in electrolysis of copper [illegible]. O. [illegible], Chem. Inst. (Chem. Ali. Ukrain. Acad. [illegible]). [illegible], 21–[illegible].—The deposition on the cathode of a spongy black deposit of Cu at high c.d. (*a*) does not [illegible] immediately, but after an interval of time, *t*. The relation *i* = *C*.Cu^{n} of a given solution is given by $\log t = \alpha + \beta \log n + \gamma$, where $\log C$ for $CuKy_3$ and $Cu(NO_3)_2$, plus C for $CuSO_4$, and α, β, and γ are [illegible] B. T.

A50-11-4 METALLURGICAL LITERATURE CLASSIFICATION

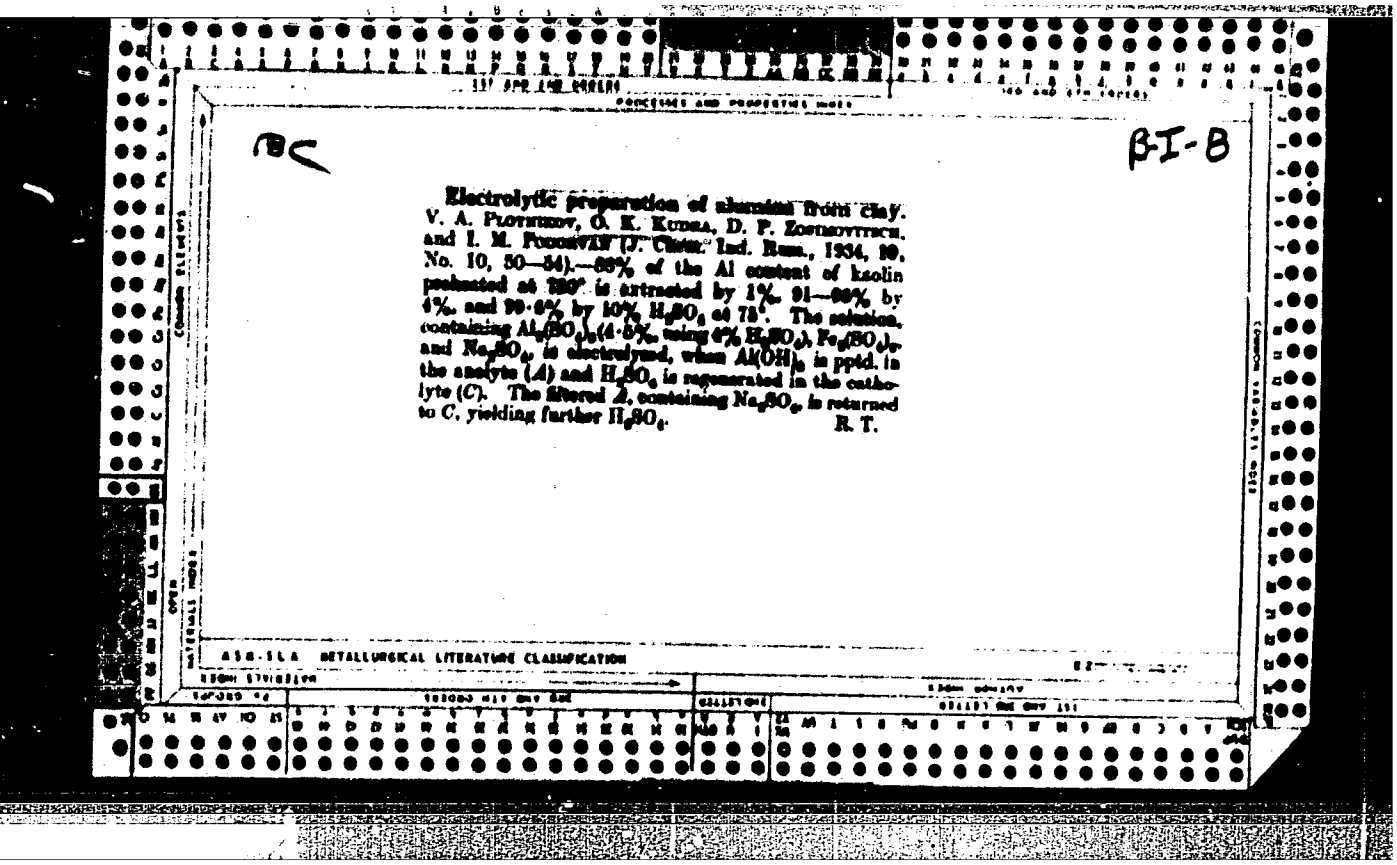


BC

B-Z-6

Electrolysis of cadmium sulphate. O. K. KUDRA (Mem. Inst. Chem. Alt-Ukrain. Acad. Sci., 1934, 1, 197-207).—With cylindrical cathodes spongy Cd deposits are obtained with a solution containing $CdSO_4$, H_2SO_4 acid 0·1, and gelatin 0·01%, using a c.d. of 0·01 amp. per sq. cm. On Al cathodes, dense smooth Cd foil of 4 mm. thickness is obtainable. Cu. Abs. (e)

A18-11A METALLURGICAL LITERATURE CLASSIFICATION



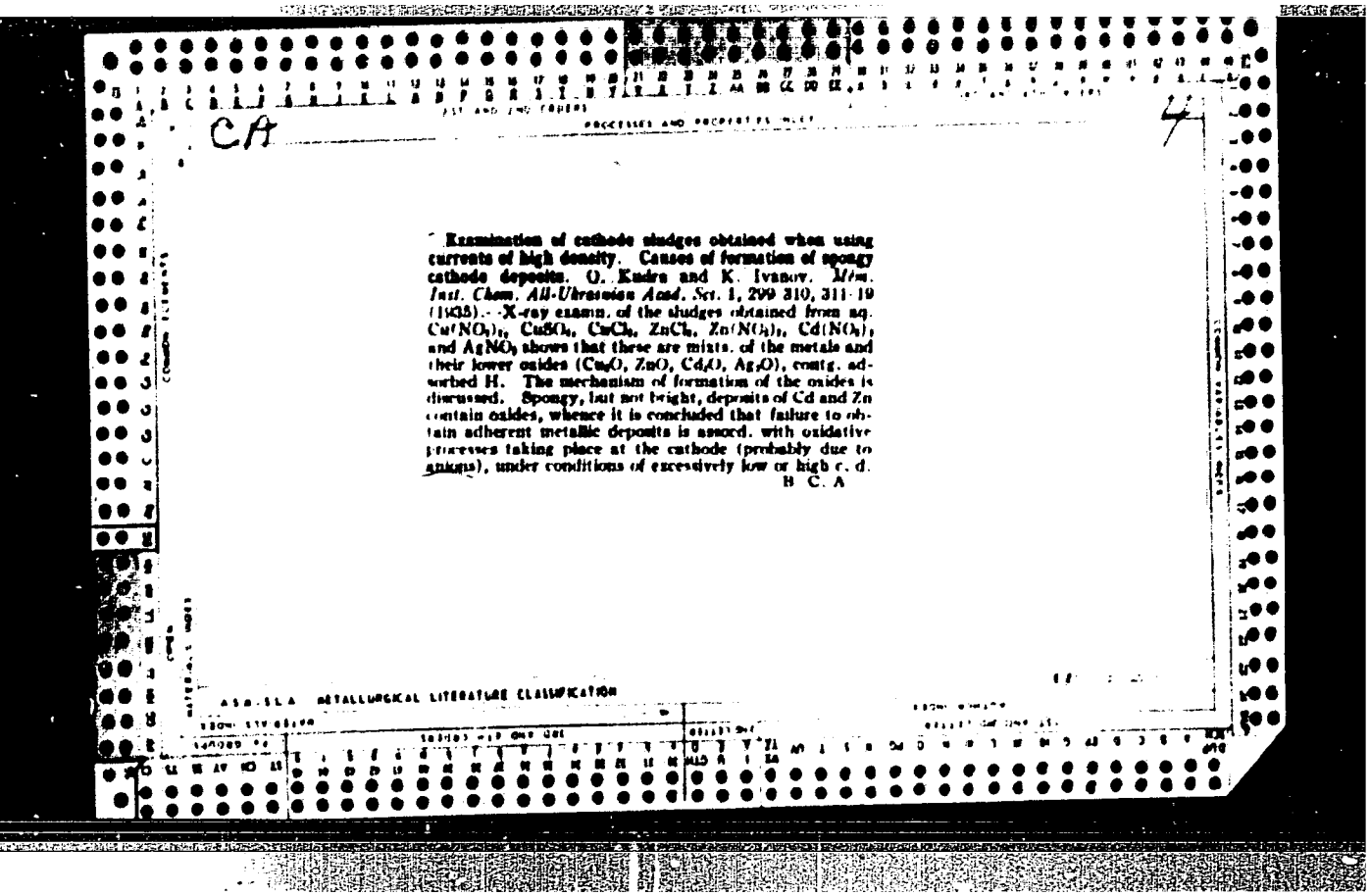
BC

B-I-B

Electrolytic preparation of aluminium from clay. V. A. PLOTNIKOV, O. K. KUDRA, D. P. ZOSIMOVITSCH, and I. M. POSNANSKI (*J. Chem. Ind. Russ.*, 1934, 10, No. 10, 50—54).—88% of the Al content of kaolin preheated at 750° is extracted by 1% H_2SO_4 at 20°, 91—98% by 4%, and 99·6% by 10% H_2SO_4 at 75°. The solution, containing $Al_2(SO_4)_3$ (4·5%), using 6% H_2SO_4, $Fe_2(SO_4)_3$, and Na_2SO_4, is electrolysed, when $Al(OH)_3$ is pptd. in the anolyte (*A*) and H_2SO_4 is regenerated in the catholyte (*C*). The filtered *A*, containing Na_2SO_4, is returned to *C*, yielding further H_2SO_4.

R. T.

ASS-SLA METALLURGICAL LITERATURE CLASSIFICATION



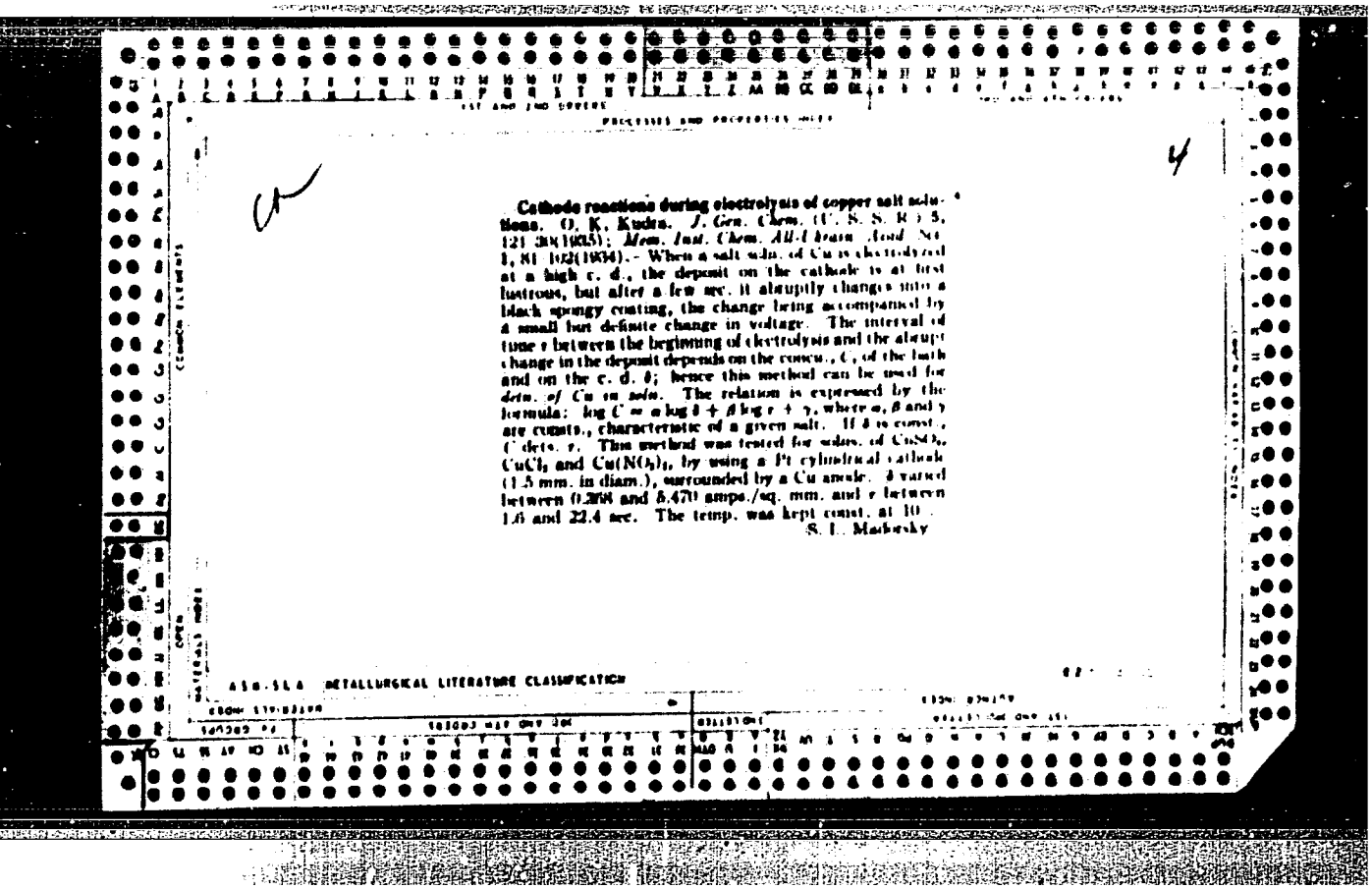
CA

4

Examination of cathode sludges obtained when using currents of high density. Causes of formation of spongy cathode deposits. O. Kudra and K. Ivanov. *Mem. Inst. Chem. All-Ukrainian Acad. Sci.* 1, 299-310, 311-19 (1935).—X-ray examn. of the sludges obtained from aq. $Cu(NO_3)_2$, $CuSO_4$, $CuCl_2$, $ZnCl_2$, $Zn(NO_3)_2$, $Cd(NO_3)_2$, and $AgNO_3$ shows that these are mixts. of the metals and their lower oxides (Cu_2O, ZnO, Cd_2O, Ag_2O), contg. adsorbed H. The mechanism of formation of the oxides is discussed. Spongy, but not bright, deposits of Cd and Zn contain oxides, whence it is concluded that failure to obtain adherent metallic deposits is assocd. with oxidative processes taking place at the cathode (probably due to anaqua), under conditions of excessively low or high c. d.

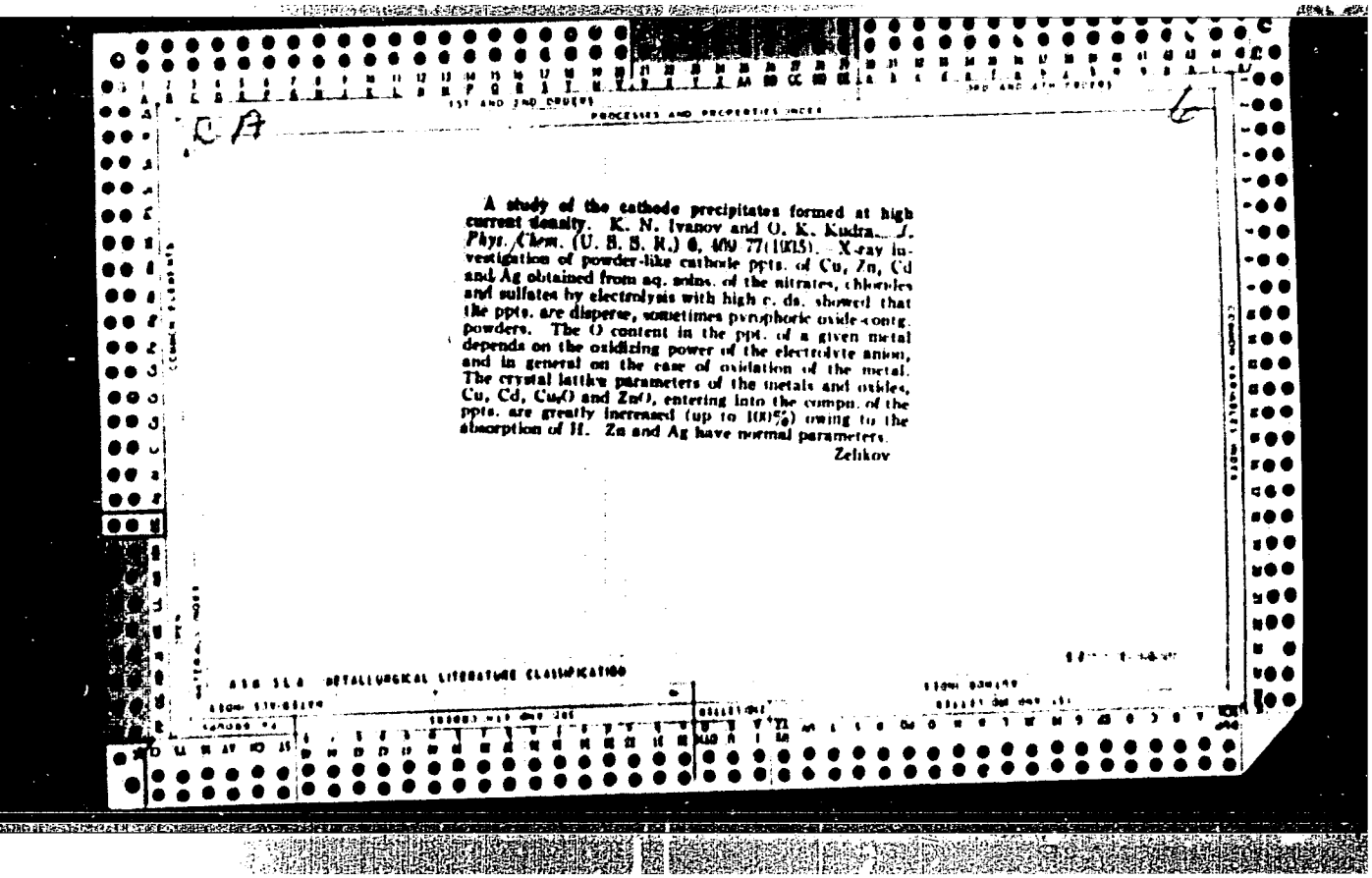
B C A

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Cathode reactions during electrolysis of copper salt solutions. O. K. Kudra. *J. Gen. Chem.* (U. S. S. R.) 5, 121-38(1935); *Mem. Inst. Chem. Ukrain. Acad. Sci.* 1, 81-102(1934).—When a salt soln. of Cu is electrolyzed at a high c. d., the deposit on the cathode is at first lustrous, but after a few sec. it abruptly changes into a black spongy coating, the change being accompanied by a small but definite change in voltage. The interval of time τ between the beginning of electrolysis and the abrupt change in the deposit depends on the concn., C, of the bath and on the c. d. δ; hence this method can be used for *detn. of Cu in solns.* The relation is expressed by the formula: $\log C = \alpha \log \delta + \beta \log \tau + \gamma$, where α, β and γ are consts., characteristic of a given salt. If δ is const., C decs. as τ. This method was tested for solns. of $CuSO_4$, $CuCl_2$ and $Cu(NO_3)_2$, by using a Pt cylindrical cathode (1.5 mm. in diam.), surrounded by a Cu anode. δ varied between 0.268 and 8.470 amps./sq. mm. and τ between 1.6 and 22.4 sec. The temp. was kept const. at 10°.

S. L. Madorsky



A study of the cathode precipitates formed at high current density. K. N. Ivanov and O. K. Kudra. *J. Phys. Chem.* (U. S. S. R.) 6, 409-77(1935). X-ray investigation of powder-like cathode ppts. of Cu, Zn, Cd and Ag obtained from aq. solns. of the nitrates, chlorides and sulfates by electrolysis with high c. ds. showed that the ppts. are disperse, sometimes pyrophoric oxide-contg. powders. The O content in the ppt. of a given metal depends on the oxidizing power of the electrolyte anion, and in general on the ease of oxidation of the metal. The crystal lattice parameters of the metals and oxides, Cu, Cd, Cu_2O and ZnO, entering into the compn. of the ppts. are greatly increased (up to 100%) owing to the absorption of H. Zn and Ag have normal parameters.

Zelikov

PROCESSES AND PROPERTIES INDEX

Ch 4

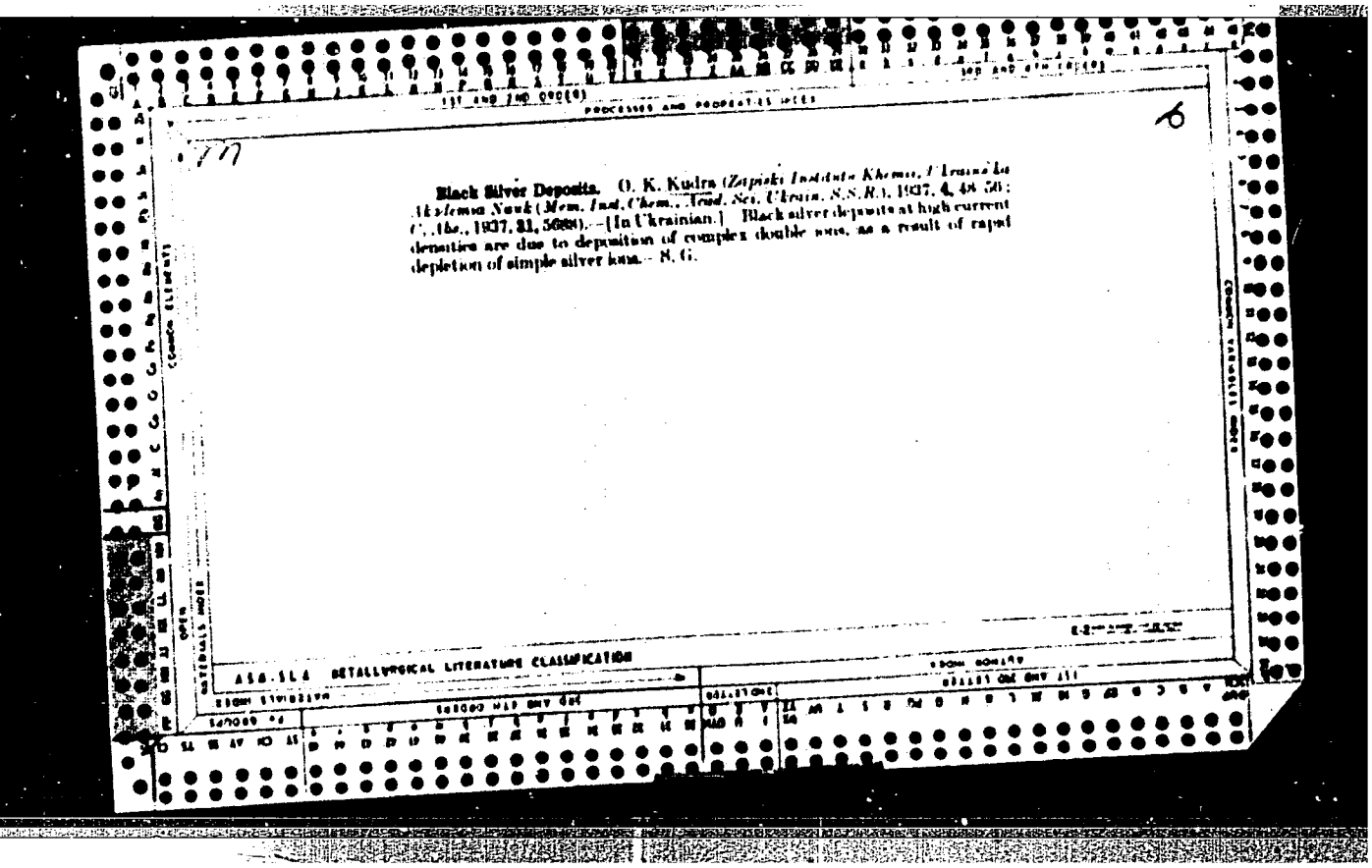
Electrolysis of benzene nitrobenzene solutions of potassium and aluminum bromides. V. A. Plotnikov and G. K. Kudra. *Mem. Inst. Chem. Ukrain. Acad. Sci.* 3, 117 85(1936); cf. C. A. 31, 2106[4], 5266[9]. The yields of K obtained by electrolysis of KBr AlBr$_3$ in C_6H_6 PhNO$_2$ are proportional to [KBr] and rise to a max. of 47% with a mixt. contg. KBr 2.05, AlBr$_3$ 11.08, C_6H_6 6.41 and PhNO$_2$ 7.41 g. **Electrochemical and cryoscopic study of the systems aluminum bromide tin bromide and rubidium chloride in benzene.** V. A. Plotnikov and I. B. Barmashenko. *Ibid.* 177 87. The system AlBr$_3$ SnBr$_4$ C_6H_6 is nonconducting and the components are not assocd. Electrolysis of the system AlBr$_3$ RbCl C_6H_6 results in liberation of Br at the anode and of a black, spongy mass, contg. Al crystallites, at the cathode. Mol. wt. data suggest formation of a complex, probably 4AlBr$_3$.RbCl. **Electrochemical study of the systems alkali chlorides aluminum bromide nitrobenzene.** J. P. Merhemni. *Ibid.* 211 30. κ of AlBr$_3$ in C_6H_6 rises with increasing [MCl] (M = H, Li, Na, K) to a max. at AlBr$_3$:MCl = 1:1, suggesting formation of 1:1 complexes. The decompn. potentials rise with increasing at. wt. of M. Alkali metal is liberated at the cathode during electrolysis. H. C. A.

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION

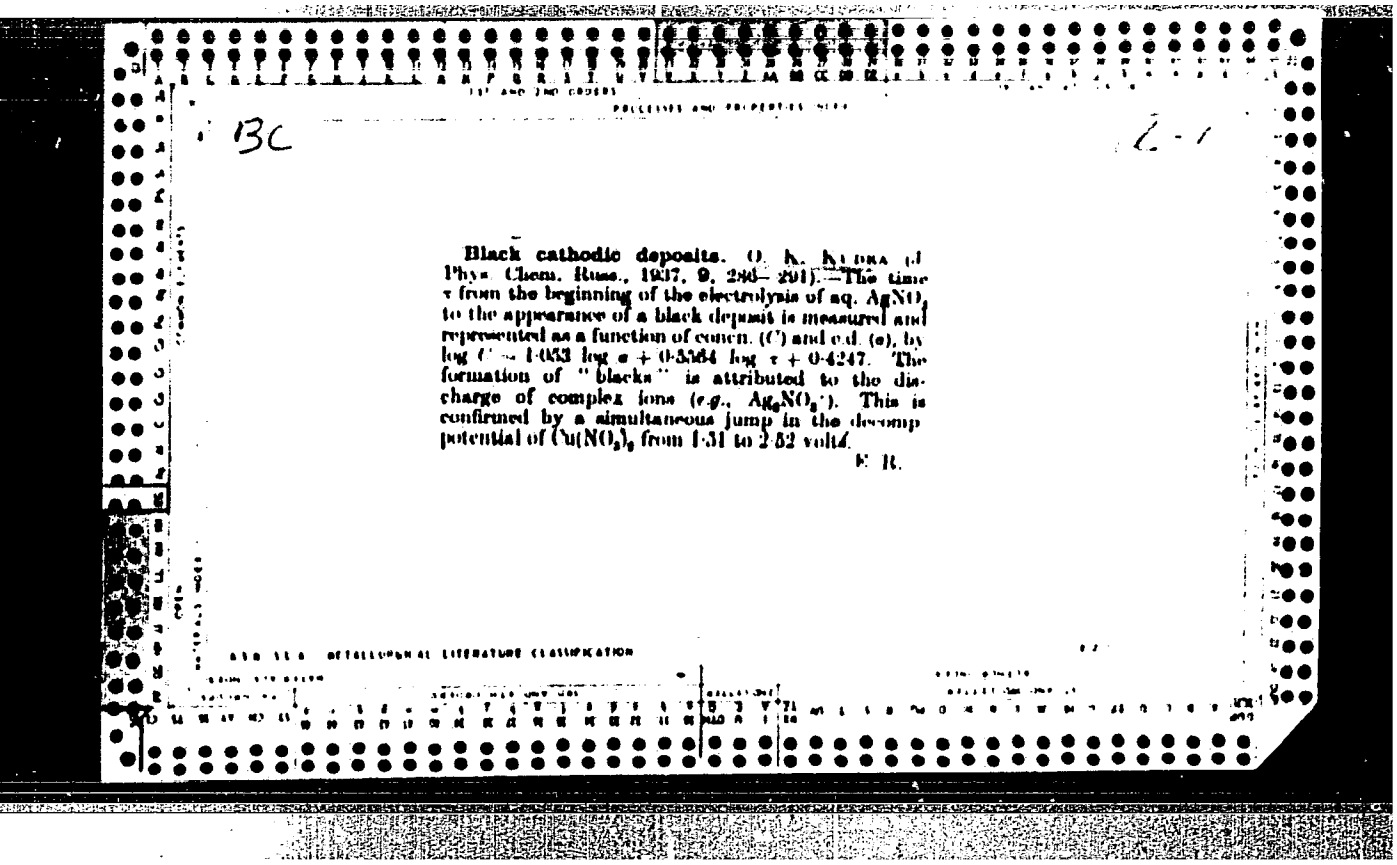
KOUDRA, O. K.

"Etude electrochimique des bromures d'aluminium et de potassium dans un melange des solvants". Plotnikow, W. A., Koudra, O. K. et Meennij, J. F. (p. 1286)

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii) 1936, Vol. 6, No. 9



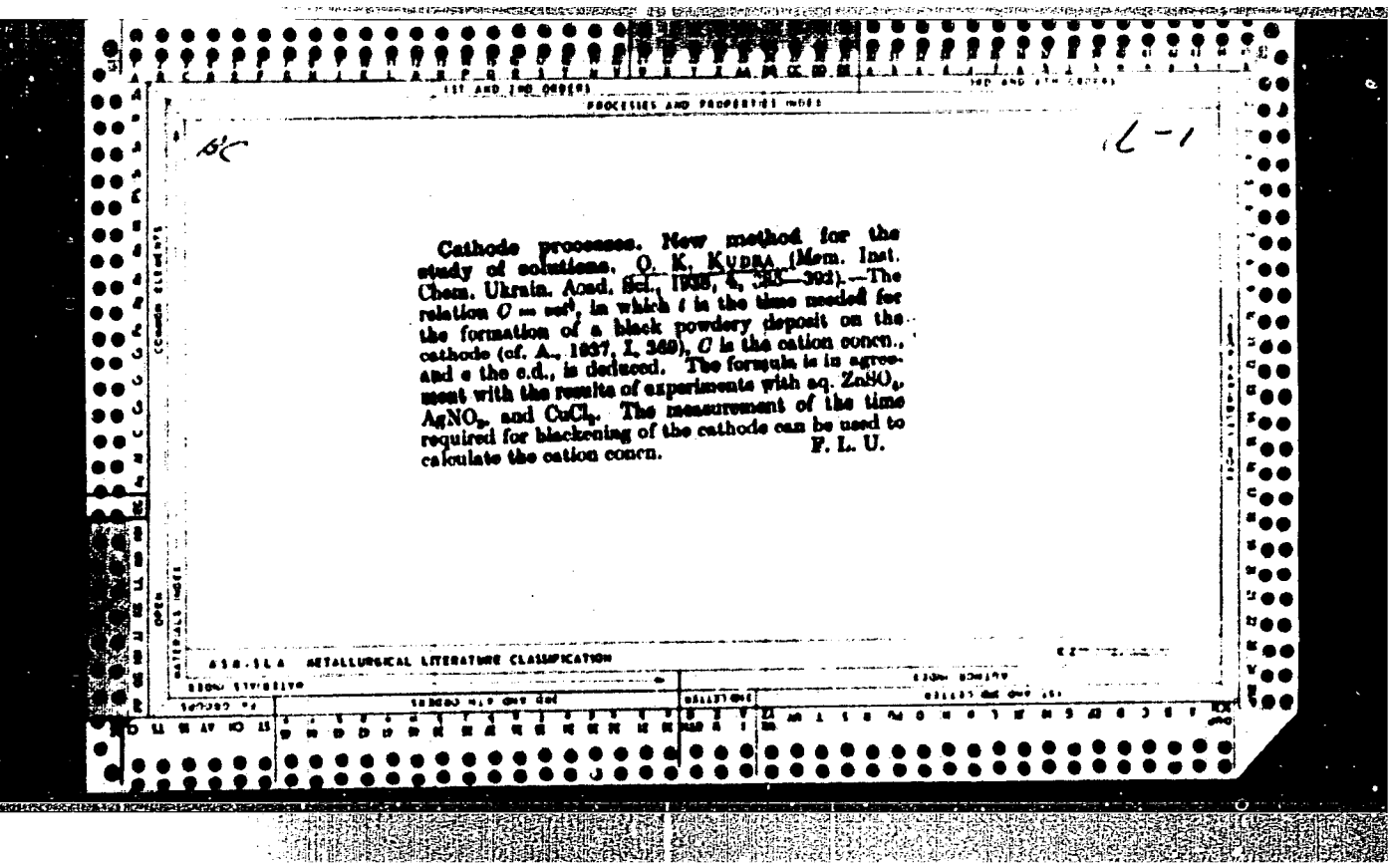
Black Silver Deposits. O. K. Kudra (*Zapiski Institute Khemii, Ukrain'ka Akademiia Nauk* (*Mem. Inst. Chem., Acad. Sci. Ukrain. S.S.R.*), 1937, **4**, 48–50; *C.*, *Abs.*, 1937, **31**, 5688).—[In Ukrainian.] Black silver deposits at high current densities are due to deposition of complex double ions, as a result of rapid depletion of simple silver ions.—S. G.



13C

Black cathodic deposits. O. K. KUDRA (J Phys. Chem. Russ., 1937, 9, 286–291).—The time τ from the beginning of the electrolysis of aq. $AgNO_3$ to the appearance of a black deposit is measured and represented as a function of concn. (C) and c.d. (a), by $\log C = 1{\cdot}053 \log a + 0{\cdot}5364 \log \tau + 0{\cdot}4247$. The formation of "blacks" is attributed to the discharge of complex ions (*e.g.*, $Ag_2NO_3^+$). This is confirmed by a simultaneous jump in the decomp potential of $Cu(NO_3)_2$ from 1·51 to 2·52 volts.

E. R.

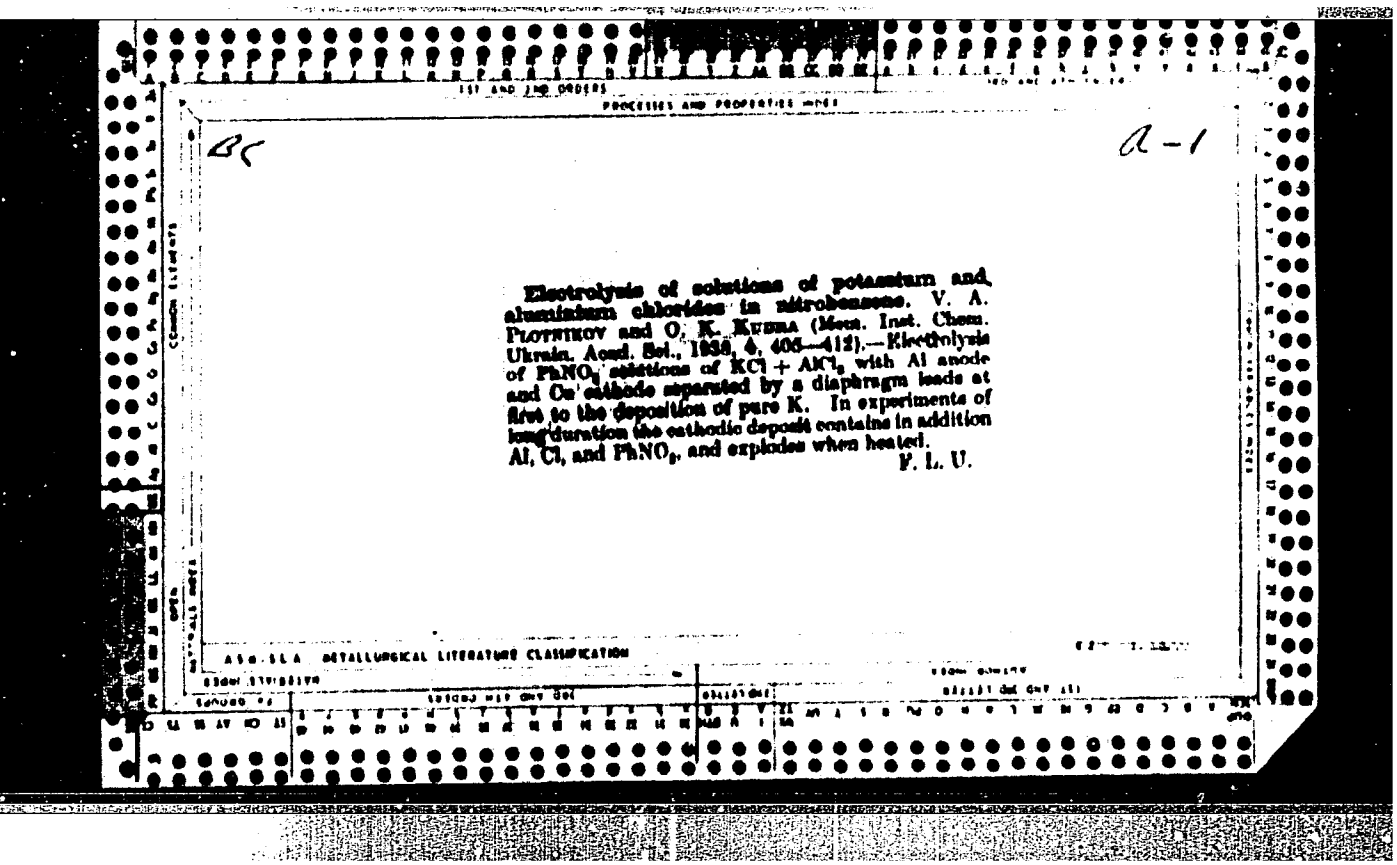


BC

L-1

Cathode processes. New method for the study of solutions. O. K. KUDRA (Mem. Inst. Chem. Ukrain. Acad. Sci., 1938, 5, 383—392).—The relation $C = \text{const}^t$, in which t is the time needed for the formation of a black powdery deposit on the cathode (cf. A., 1937, I, 369), C is the cation concn., and e the e.d., is deduced. The formula is in agreement with the results of experiments with aq. $ZnSO_4$, $AgNO_3$, and $CuCl_2$. The measurement of the time required for blackening of the cathode can be used to calculate the cation concn. F. L. U.

A50-5LA METALLURGICAL LITERATURE CLASSIFICATION

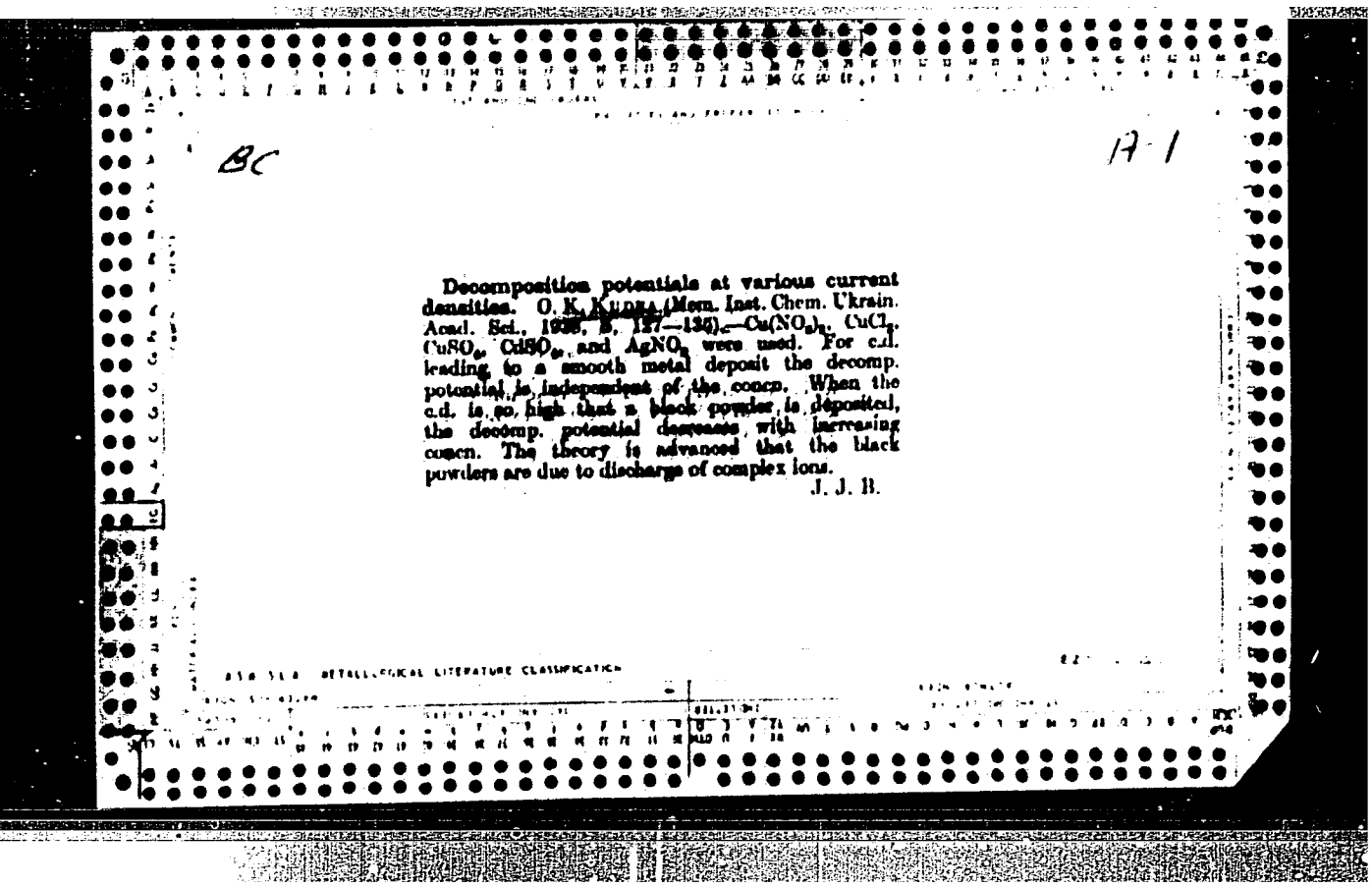


Bc

A-1

Electrolysis of solutions of potassium and aluminium chlorides in nitrobenzene. V. A. PLOTNIKOV and O. K. KUDRA (Mem. Inst. Chem. Ukrain. Acad. Sci., 1938, 4, 405—412).—Electrolysis of $PhNO_2$ solutions of $KCl + AlCl_3$ with Al anode and Cu cathode separated by a diaphragm leads at first to the deposition of pure K. In experiments of long duration the cathodic deposit contains in addition Al, Cl, and $PhNO_2$, and explodes when heated.

F. L. U.

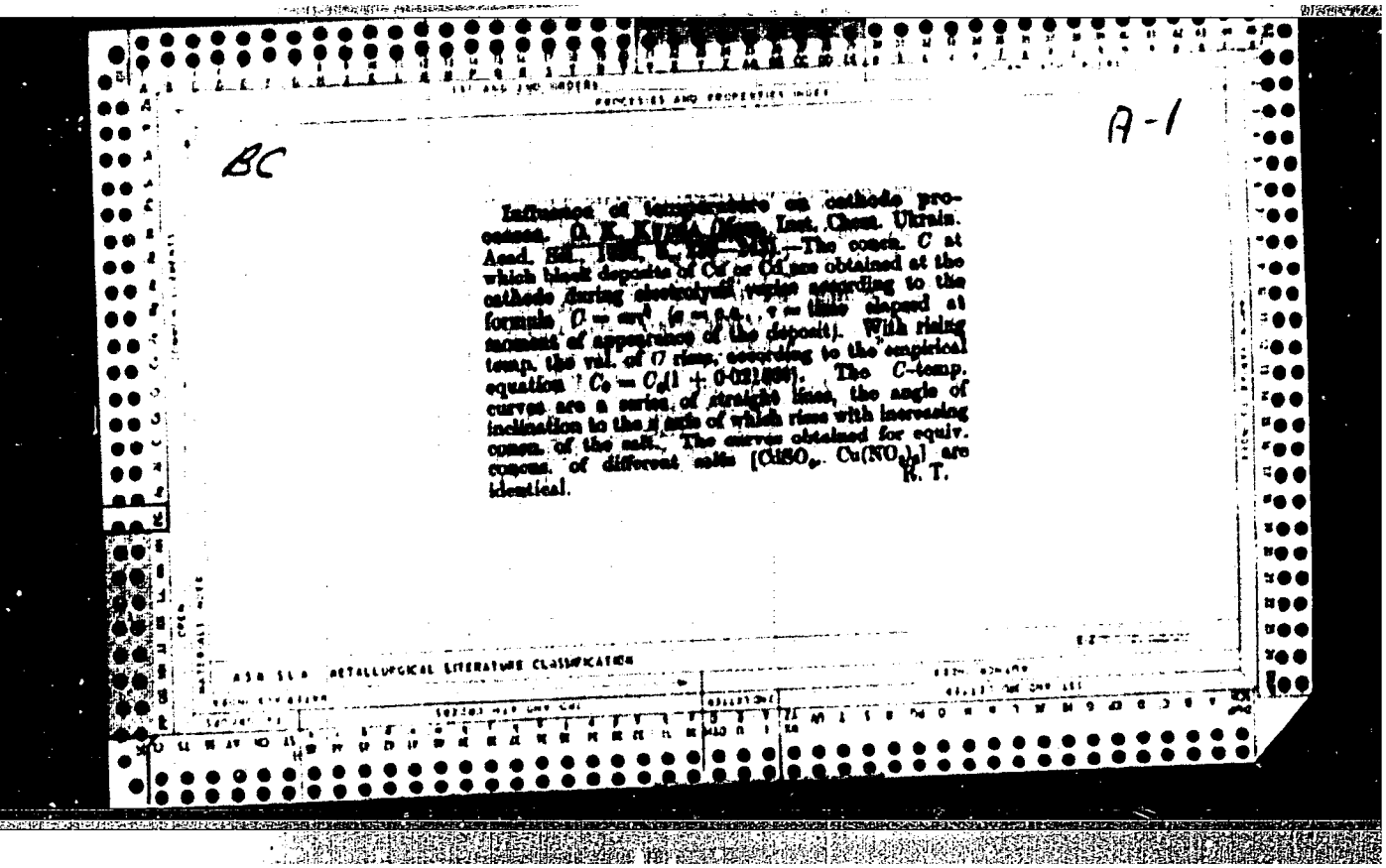


BC

17-1

Decomposition potentials at various current densities. O. K. KUDRA (Mem. Inst. Chem. Ukrain. Acad. Sci., 1936, 3, 127—136).—$Cu(NO_3)_2$, $CuCl_2$, $CuSO_4$, $CdSO_4$, and $AgNO_3$ were used. For c.d. leading to a smooth metal deposit the decomp. potential is independent of the concn. When the c.d. is so high that a black powder is deposited, the decomp. potential decreases with increasing concn. The theory is advanced that the black powders are due to discharge of complex ions.

J. J. B.



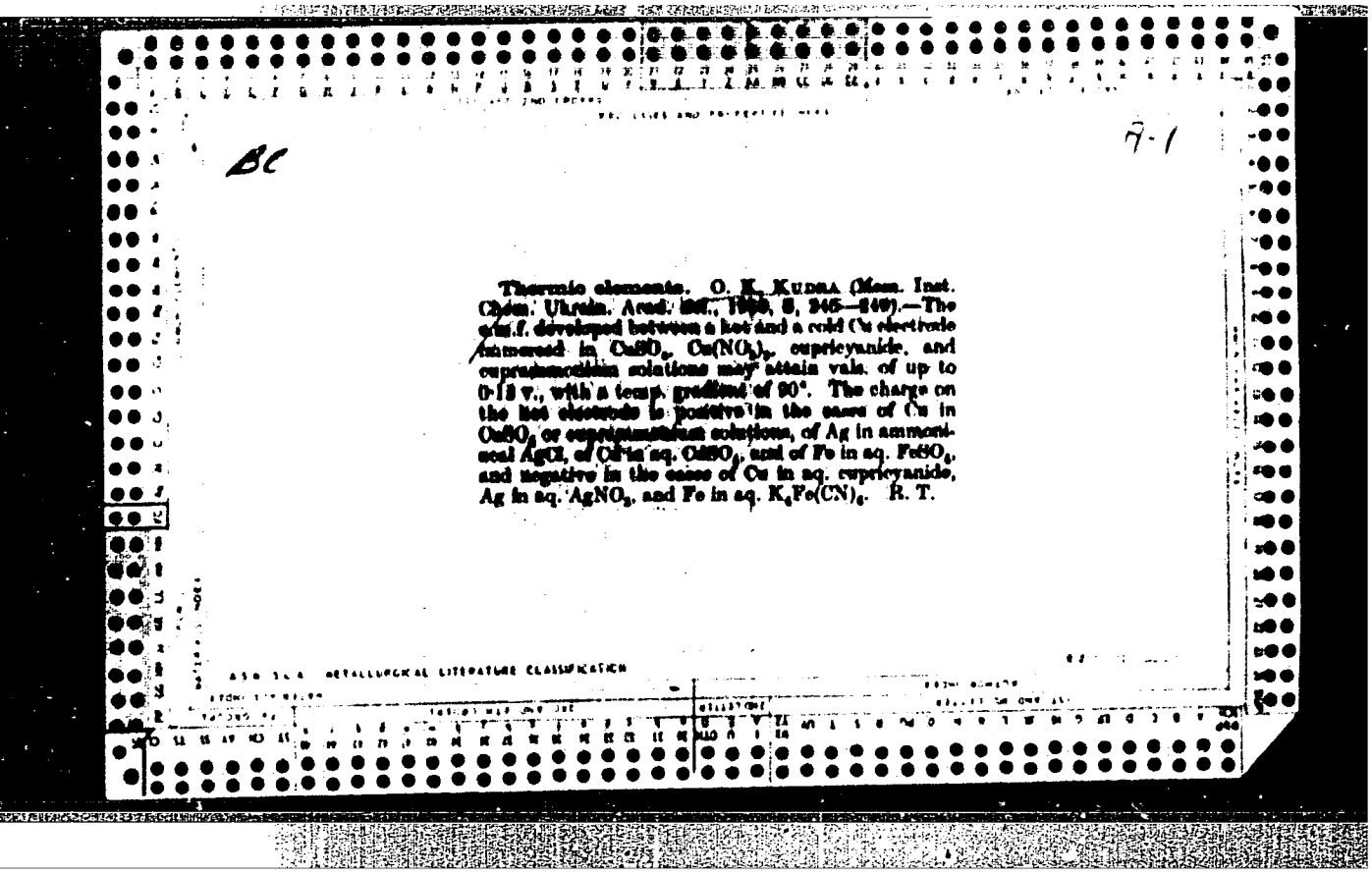
BC

A-1

Influence of temperature on cathode processes. O. K. K[illegible], Inst. Chem. Ukrain. Acad. [illegible]. [illegible].—The concn. C at which black deposits of Cu or Cd are obtained at the cathode during electrolysis varies according to the formula $D = aC^n$ (a = const., n = time elapsed at moment of appearance of the deposit). With rising temp. the val. of D rises, according to the empirical equation $C_0 = C_0[1 + 0.02(t-20)]$. The C-temp. curves are a series of straight lines, the angle of inclination to the t axis of which rises with increasing concn. of the salt. The curves obtained for equiv. concns. of different salts [$CdSO_4$, $Cu(NO_3)_2$] are identical.

K. T.

ASB SLA METALLURGICAL LITERATURE CLASSIFICATION



BC

9-1

Thermic elements. O. K. Kuzma (Mem. Inst. Chem. Ukrain. Acad. Inf., 1938, 5, 345—349).—The e.m.f. developed between a hot and a cold Cu electrode immersed in $CuSO_4$, $Cu(NO_3)_2$, cupricyanide, and cuprammonium solutions may attain vals. of up to 0·13 v., with a temp. gradient of 90°. The charge on the hot electrode is positive in the cases of Cu in $CuSO_4$ or cuprammonium solutions, of Ag in ammoniacal AgCl, of Cu in aq. $CuSO_4$, and of Fe in aq. $FeSO_4$, and negative in the cases of Cu in aq. cupricyanide, Ag in aq. $AgNO_3$, and Fe in aq. $K_4Fe(CN)_6$. R. T.

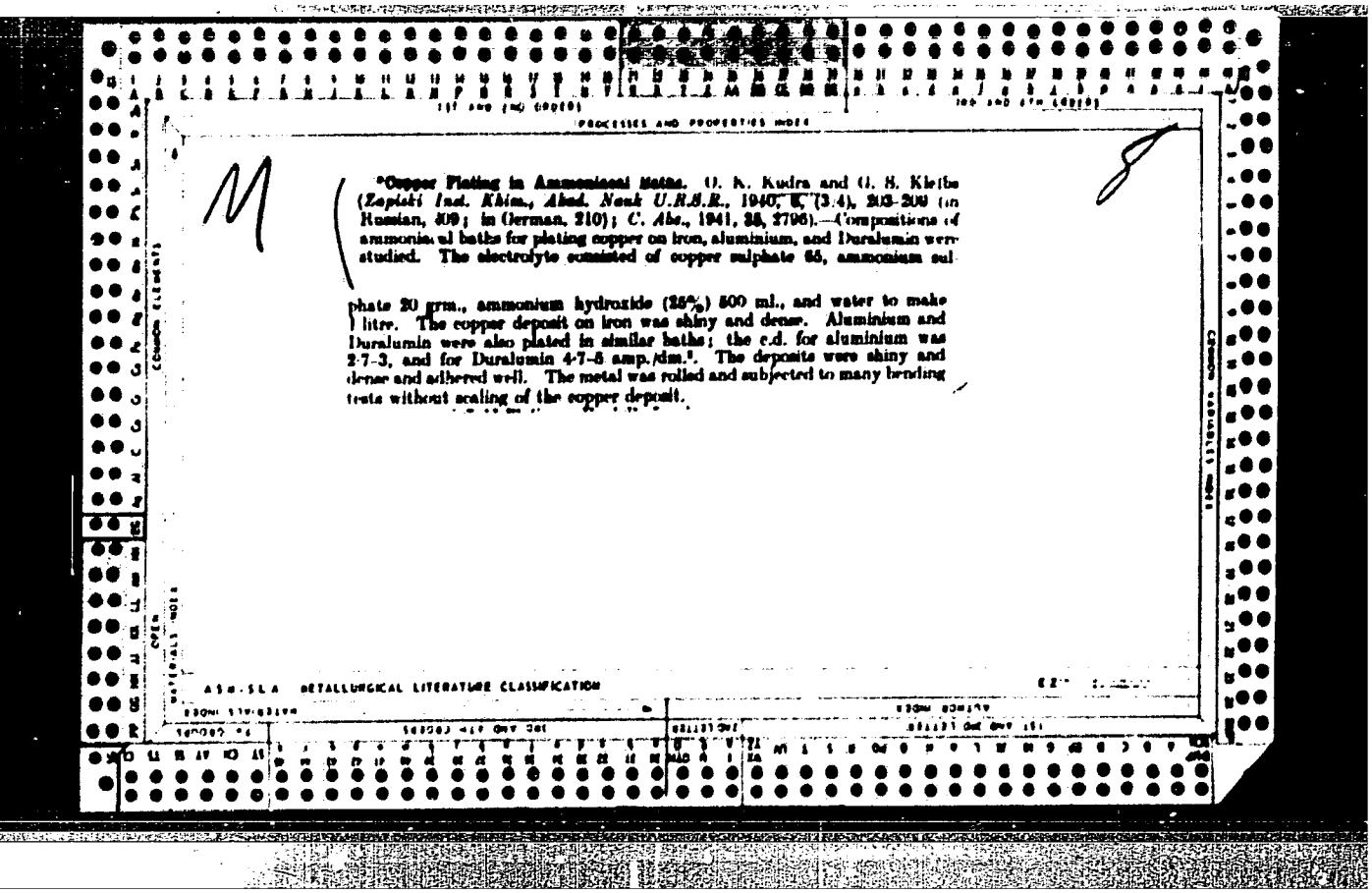
PROCESSES AND PROPERTIES INDEX

CA

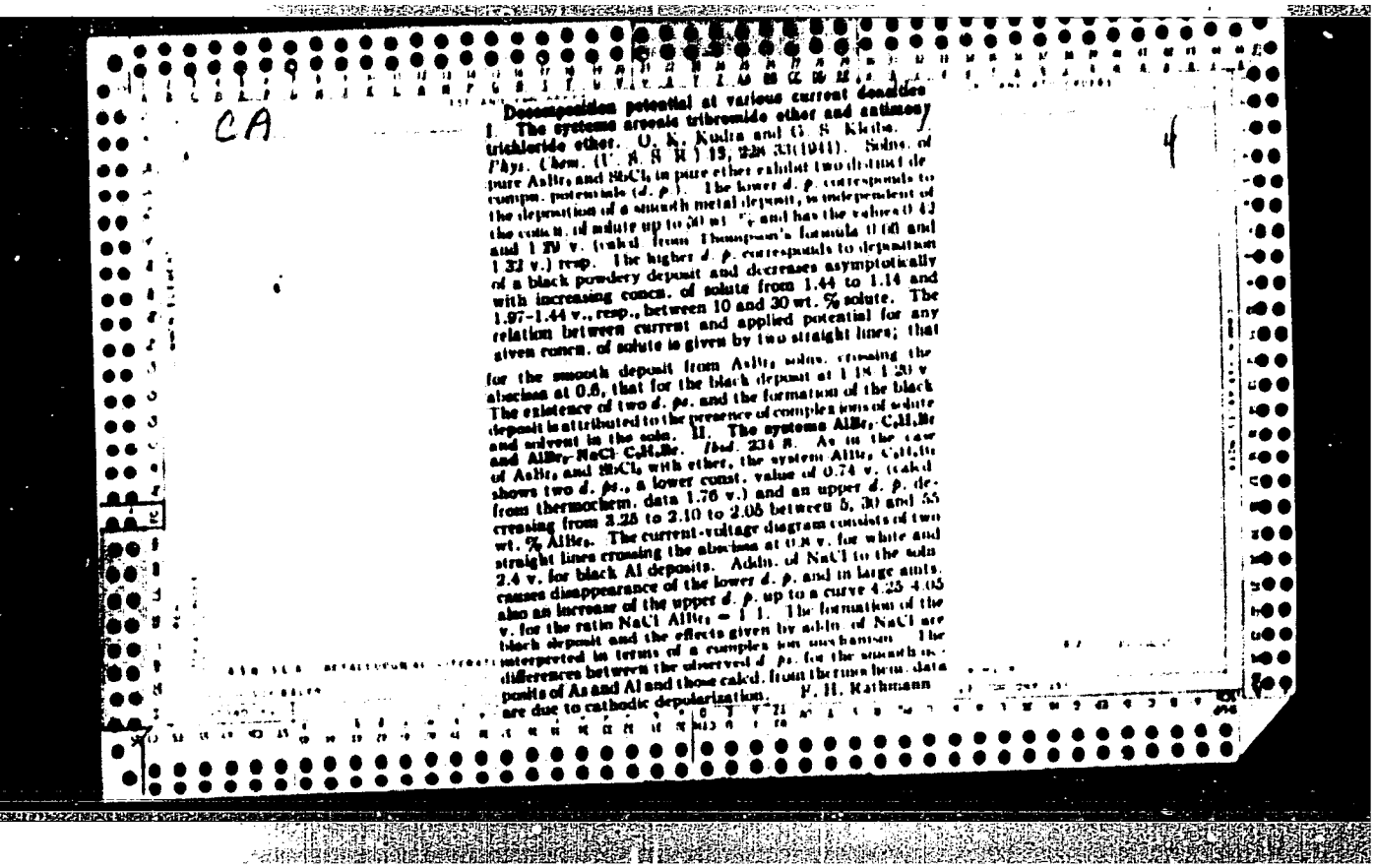
4

Decomposition potential at various current densities. O. K. Kudra. *J. Phys. Chem.* (U. S. S. R.) 12, 148-52 (1938). - See *C. A.* 33, 44[1]. H. J. C.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



***Copper Plating in Ammoniacal Baths.** O. A. Kudra and O. S. Kleiba (*Zapiski Inst. Khim., Akad. Nauk U.R.S.R.*, 1940, **7**, (3.4), 203-209 (in Russian, 209; in German, 210); *C. Abs.*, 1941, **35**, 2796).—Compositions of ammoniacal baths for plating copper on iron, aluminium, and Duralumin were studied. The electrolyte consisted of copper sulphate 65, ammonium sulphate 20 grm., ammonium hydroxide (25%) 500 ml., and water to make 1 litre. The copper deposit on iron was shiny and dense. Aluminium and Duralumin were also plated in similar baths; the c.d. for aluminium was 2-7-3, and for Duralumin 4-7-6 amp./dm.^{2}. The deposits were shiny and dense and adhered well. The metal was rolled and subjected to many bending tests without scaling of the copper deposit.



CA

4

Decomposition potential at various current densities

I. The systems arsenic tribromide ether and antimony trichloride ether. O. K. Kudra and G. S. Kleiba. *J. Phys. Chem.* (U. S. S. R.) 15, 228-33(1941). Solns. of pure $AsBr_3$ and $SbCl_3$ in pure ether exhibit two distinct decompn. potentials (*d. p.*). The lower *d. p.* corresponds to the deposition of a smooth metal deposit, is independent of the concn. of solute up to 30 wt. % and has the values 0.42 and 1.29 v. (calcd. from Thompson's formula 0.60 and 1.32 v.) resp. The higher *d. p.* corresponds to deposition of a black powdery deposit and decreases asymptotically with increasing concn. of solute from 1.44 to 1.14 and 1.97–1.44 v., resp., between 10 and 30 wt. % solute. The relation between current and applied potential for any given concn. of solute is given by two straight lines; that for the smooth deposit from $AsBr_3$ solns. crossing the abscissa at 0.6, that for the black deposit at 1.18–1.20 v. The existence of two *d. ps.* and the formation of the black deposit is attributed to the presence of complex ions of solute and solvent in the solns. II. The systems $AlBr_3$-C_6H_6Br and $AlBr_3$-NaCl-C_6H_6Br. *Ibid.* 234–8. As in the case of $AsBr_3$ and $SbCl_3$ with ether, the system $AlBr_3$-C_6H_6Br shows two *d. ps.*, a lower const. value of 0.74 v. (calcd. from thermochem. data 1.76 v.) and an upper *d. p.* decreasing from 2.25 to 2.10 to 2.05 between 5, 30 and 55 wt. % $AlBr_3$. The current-voltage diagram consists of two straight lines crossing the abscissa at 0.8 v. for white and 2.4 v. for black Al deposits. Addn. of NaCl to the solns. causes disappearance of the lower *d. p.* and in large amts. also an increase of the upper *d. p.* up to a curve 4.25–4.05 v. for the ratio NaCl : $AlBr_3$ = 1 : 1. The formation of the black deposit and the effects given by addn. of NaCl are interpreted in terms of a complex ion mechanism. The differences between the observed *d. ps.* for the smooth deposits of As and Al and those calcd. from thermochem. data are due to cathodic depolarization. F. H. Rathmann

PROCESSES AND PROPERTIES INDEX

dc

Decomposition potentials of the system $AlBr_3$–NaBr–KBr at various current densities. [illegible] and O. S. Kleba (J. Phys. Chem. Russ., 1944, [illegible]).—$AlBr_3$–KBr mixtures show two decomp. potentials; at the lower one bright Al, and at the higher black Al, is deposited. [illegible] is independent of [illegible] $(AlBr_3)_2$ and [illegible] NaCl (0·5 mol.) and $AlBr_3$ ([illegible] mol.) [illegible] there is a third decomp. potential at which Na is deposited. J. J. B.

METALLURGICAL LITERATURE CLASSIFICATION

MOSKVIN, Grigoriy Nikiforovich; KUDRYASHEV, Aleksandr Timofeyevich; ARTEMKIN, Aleksey Andreyevich; SURZHIN, Boris Aleksandrovich; GONCHAROV, S.F., kand.tekhn.nauk, red.; BOBROVA, Ye.N., tekhn.red.

[Manual for railroad water supply workers] Rukovodstvo rabotnikam zheleznodorozhnogo vodosnabzheniia. Moskva, Vses.izdatel'sko-poligr.ob"edinenie M-va putei soobshcheniia, 1960. 509 p. (MIRA 13:5)

(Railroads--Water supply)

VESELOV, V.V., insh.; KUDRYASHOV, A.I., insh.; ORECHKIN, D.B., insh.; POPOVA, N.V., insh.

Effect of the content of nonsulfur compounds on the quality of washing powders. Masl.-shir.prom. 26 no.1:13-15 Ja '60. (MIRA 13:4)

(Cleaning compounds)

KISELEVA, Ye.V.; KARETNIKOV, G.S.; KUDRYASHOV, I.V.; BOTVINKIN, O.K., doktor khim.nauk, retsenzent; MAKOLKIN, I.A., doktor tekhn.nauk, retsenzent; MISHCHENKO, K.P., doktor khim.nauk, retsenzent; GRYAZNOV, V.M., red.; REZUKHINA, T.N., red.; ZAZUL'SKAYA, V.F., tekhn.red.

[Collection of illustrated physical chemistry problems and exercises] Sbornik primerov i zadach po fizicheskoi khimii. Moskva, Gos. nauchno-tekhn.izd-vo khim.lit-ry, 1960. 264 p. (MIRA 13:7)
(Chemistry, Physical and theoretical--Problems, exercises, etc.)

SOV/124-59-8-8862

Translation from: Referativnyy zhurnal, Mekhanika, 1959, Nr 8, p 79 (USSR)

AUTHORS: Kudryashov, L.I., Devyatkin, B.A.

TITLE: On the Possibility of Applying the Conditions of a Uniform Helical Motion to the Investigation of the Nonisothermic Motion of a Gas Under Laminar Conditions in Horizontal Pipes of Circular Cross Section

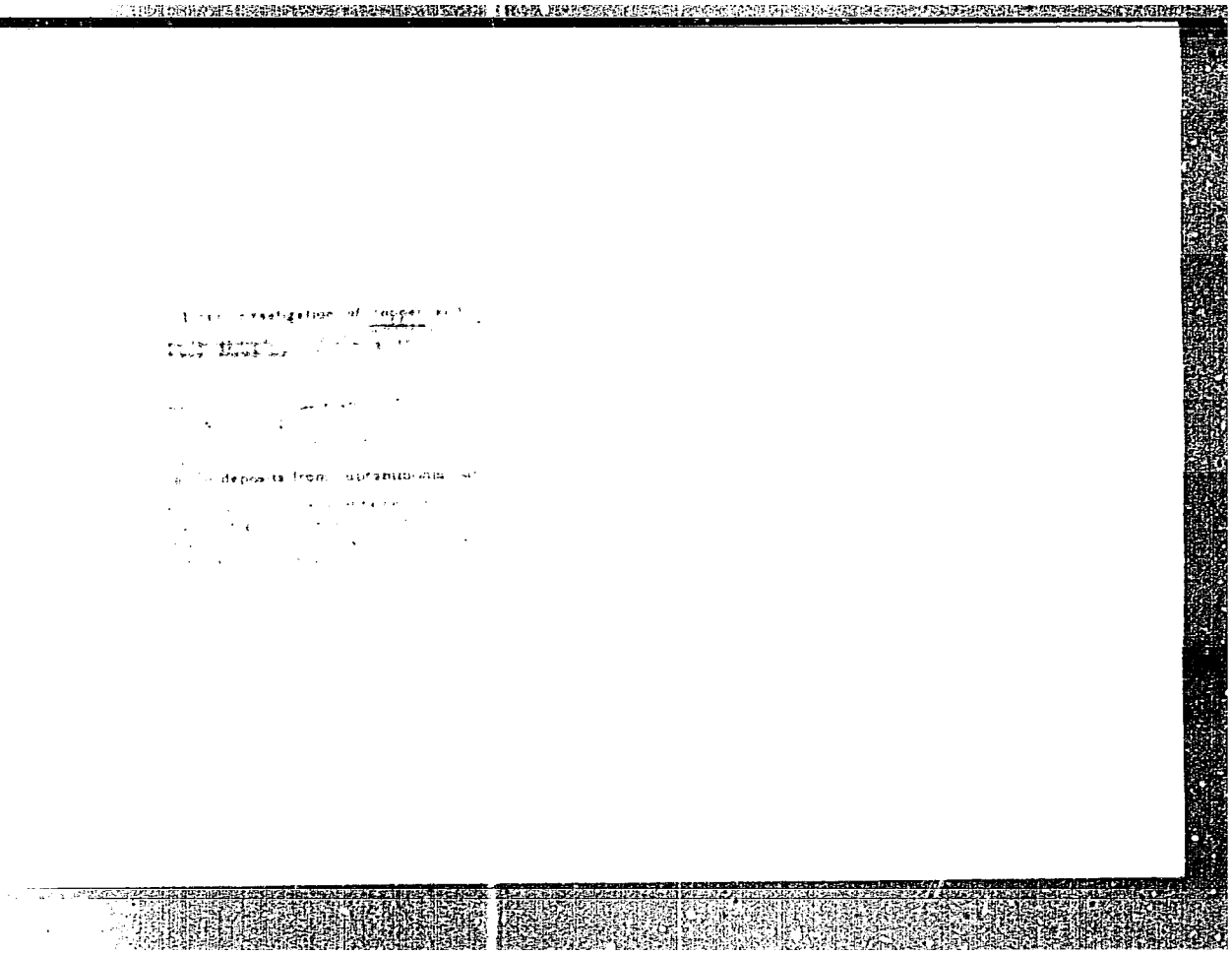
PERIODICAL: Sb. nauchn. tr. Kuybyshevsk. industr. in-ta, 1957, Nr 7, pp 61 - 73

ABSTRACT: The authors attempt to study the nonisothermic motion of a gas in pipes by application of a model of uniform helical motion. The special case of the motion of a baroclinic viscous gas is discussed, when the condition

$$\frac{1}{\rho}\,\mathrm{grad}\,p = -\,\mathrm{grad}\left(\frac{1}{2}\,v^2 + \pi\right) - \nu\,\mathrm{rot}\,(f\,v)$$

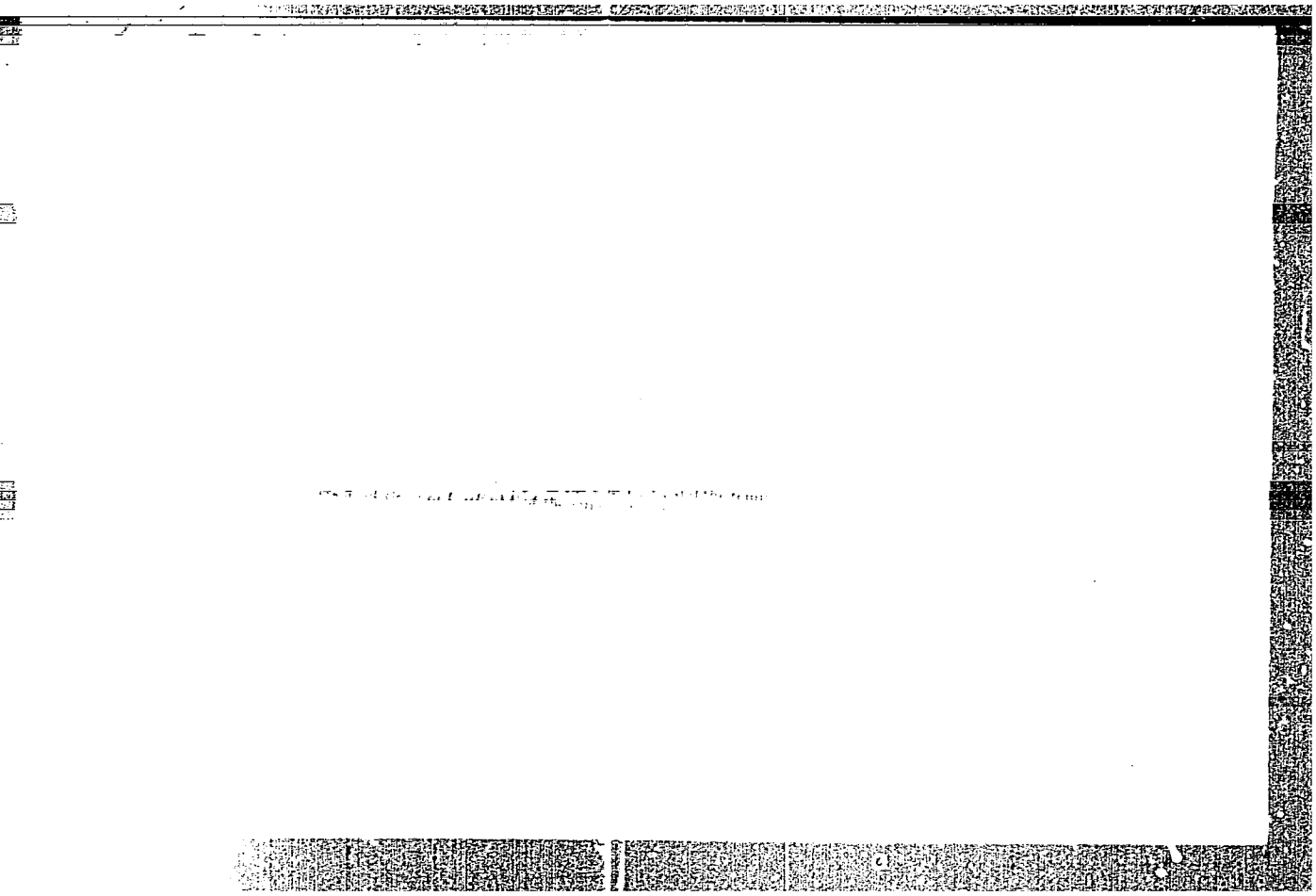
is fulfilled for the entire flow and the vectors v and rot v satisfy the condition: rot v = f v. The authors repeat here

Card 1/2



Catalytic properties of spongy deposits of copper and zinc.
[illegible] Zhurnal Fiz. Khim. [illegible] Akad. Nauk S.S.S.R. 8, No. 2, 11-4(Russian and English summaries, 11-5)(1936). A black deposit, comprising a mixt. of Cu, ZnO, and Cr_2O_3, was prepd with an av. compn.: Cu 83.5, ZnO 11.0%, Cr_2O_3 4.65%. The mixt. was used for synthesis of methanol from a gas consisting of CO 17.4, H_2 77.0, and N_2 5.6% at 150 atm. pressure and at a temp. range 200 to 400°. The product contained 23% methanol. Analysis of exhaust gas indicated absence of CH_4 and CO_2.

M. O. Holowaty



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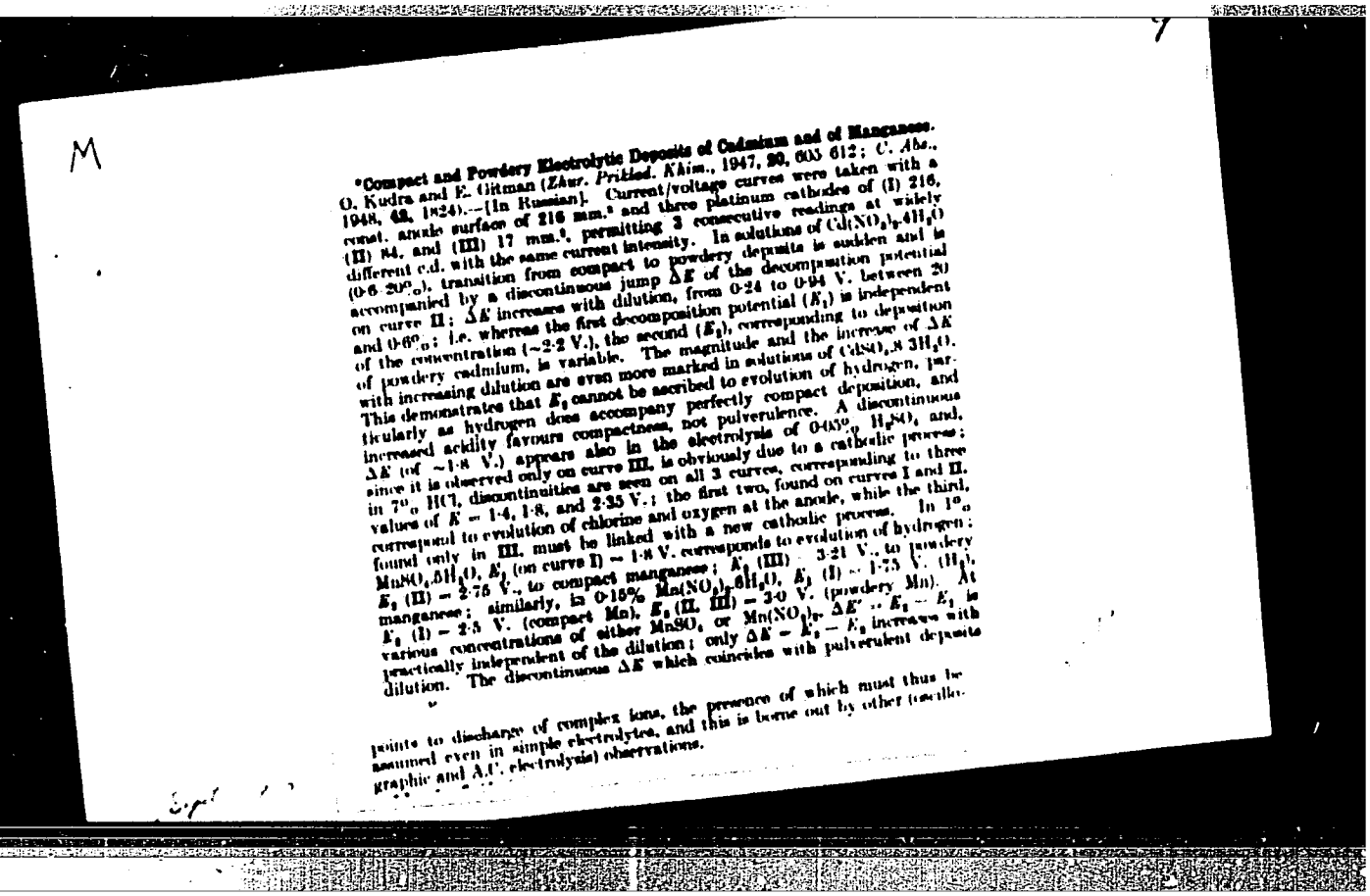
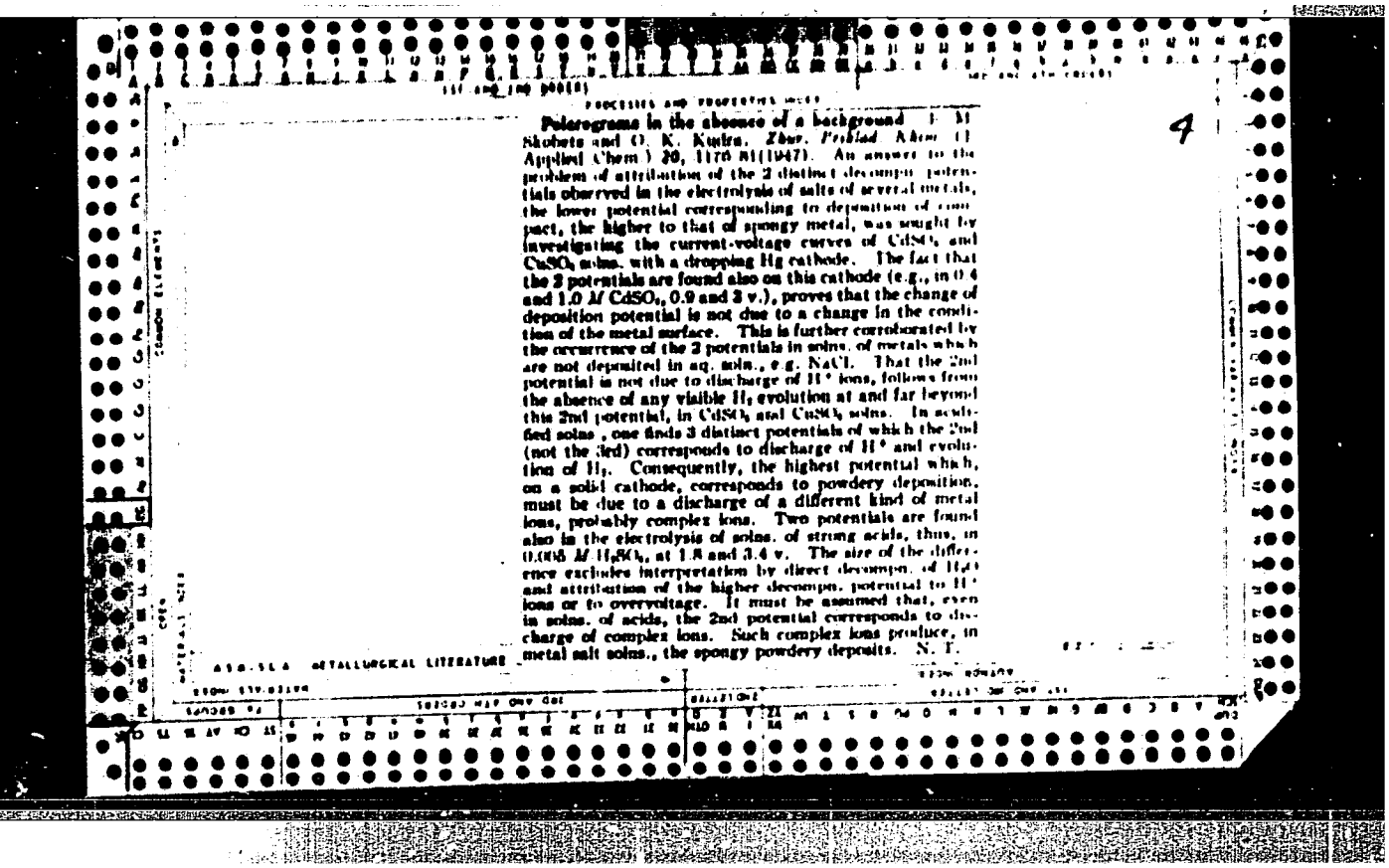


*Compact and Powdery Electrolytic Deposits of Cadmium and of Manganese. O. Kudra and E. Gitman (*Zhur. Prikład. Khim.*, 1947, **20**, 603–612; *C. Abs.*, 1948, **42**, 1824).—[In Russian]. Current/voltage curves were taken with a const. anode surface of 216 mm.² and three platinum cathodes of (I) 216, (II) 84, and (III) 17 mm.², permitting 3 consecutive readings at widely different c.d. with the same current intensity. In solutions of $Cd(NO_3)_2 \cdot 4H_2O$ (0·6–20%), transition from compact to powdery deposits is sudden and is accompanied by a discontinuous jump ΔE of the decomposition potential on curve II; ΔE increases with dilution, from 0·24 to 0·94 V. between 20 and 0·6%; i.e. whereas the first decomposition potential (E_1) is independent of the concentration (~2·2 V.), the second (E_2), corresponding to deposition of powdery cadmium, is variable. The magnitude and the increase of ΔE with increasing dilution are even more marked in solutions of $CdSO_4 \cdot 8\,3H_2O$. This demonstrates that E_2 cannot be ascribed to evolution of hydrogen, particularly as hydrogen does accompany perfectly compact deposition, and increased acidity favours compactness, not pulverulence. A discontinuous ΔE (of ~1·8 V.) appears also in the electrolysis of 0·05% H_2SO_4, and, since it is observed only on curve III, is obviously due to a cathodic process; in 7% HCl, discontinuities are seen on all 3 curves, corresponding to three values of E = 1·4, 1·8, and 2·35 V.; the first two, found on curves I and II, correspond to evolution of chlorine and oxygen at the anode, while the third, found only in III, must be linked with a new cathodic process. In 1% $MnSO_4 \cdot 5H_2O$, E_1 (on curve I) = 1·8 V. corresponds to evolution of hydrogen; E_2 (II) = 2·75 V., to compact manganese; E_2 (III) = 3·21 V., to powdery manganese; similarly, in 0·15% $Mn(NO_3)_2 \cdot 6H_2O$, E_2 (I) = 1·75 V. (H_2), E_2 (II) = 2·5 V. (compact Mn), E_2 (II, III) = 3·0 V. (powdery Mn). At various concentrations of either $MnSO_4$ or $Mn(NO_3)_2$, $\Delta E' = E_2 - E_1$ is practically independent of the dilution; only $\Delta E = E_2 - E_1$ increases with dilution. The discontinuous ΔE which coincides with pulverulent deposits points to discharge of complex ions, the presence of which must thus be assumed even in simple electrolytes, and this is borne out by other (oscillographic and A.C. electrolysis) observations.



Polarograms in the absence of a background. I. M. Kholhoff and O. K. Kudra. *Zhur. Prikład. Khim.* (J. Applied Chem.) **20**, 1170-81(1947). An answer to the problem of attribution of the 2 distinct decompn. potentials observed in the electrolysis of salts of several metals, the lower potential corresponding to deposition of compact, the higher to that of spongy metal, was sought by investigating the current-voltage curves of $CdSO_4$ and $CuSO_4$ solns. with a dropping Hg cathode. The fact that the 2 potentials are found also on this cathode (e.g., in 0.4 and 1.0 *M* $CdSO_4$, 0.9 and 3 v.), proves that the change of deposition potential is not due to a change in the condition of the metal surface. This is further corroborated by the occurrence of the 2 potentials in solns. of metals which are not deposited in aq. solns., e.g. NaCl. That the 2nd potential is not due to discharge of H^+ ions, follows from the absence of any visible H_2 evolution at and far beyond this 2nd potential, in $CdSO_4$ and $CuSO_4$ solns. In acidified solns., one finds 3 distinct potentials of which the 2nd (not the 3rd) corresponds to discharge of H^+ and evolution of H_2. Consequently, the highest potential which, on a solid cathode, corresponds to powdery deposition, must be due to a discharge of a different kind of metal ions, probably complex ions. Two potentials are found also in the electrolysis of solns. of strong acids, thus, in 0.005 *M* H_2SO_4, at 1.8 and 3.4 v. The size of the difference excludes interpretation by direct decompn. of H_2O and attribution of the higher decompn. potential to H^+ ions or to overvoltage. It must be assumed that, even in solns. of acids, the 2nd potential corresponds to discharge of complex ions. Such complex ions produce, in metal salt solns., the spongy powdery deposits. N. T.

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35190. Zakon Elektrovydeleniya Metallov Pri Vysokikh Plotnostyakh Toka. V SB: 50 Let Kievsk. Politekhn. In-Ta. Kiev, 1948, S. 169-81. --Bibliogr: 16 Nazv.

SO: Letopis' Zhurnal'nykh Statey, Vol. 48, Moskva, 1949

KUDRA, O.

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USSR/Chemistry - Electrolysis
Chemistry - Anions

Mar 1948

"The Problem of the Influence of Anions on Electrode Processes," O. Kudra, E. Gitman, 5 pp

"Zhur Prik Khim" Vol XXI, No 3, pp. 284-89

For cadmium and manganese nitrate solutions, the potentials of formation of loose cathode deposits are sensibly lower than those for solutions of other salts of these metals. It was suggested that this was connected with the oxidizing action of the NO_3' ion. The described experiments with zinc and lead salts at various current densities, however, show that this is not the case. Submitted 2 Jun 1947.

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